

^{TCD}MODEL AIRPLANE NEWS

IN THIS ISSUE

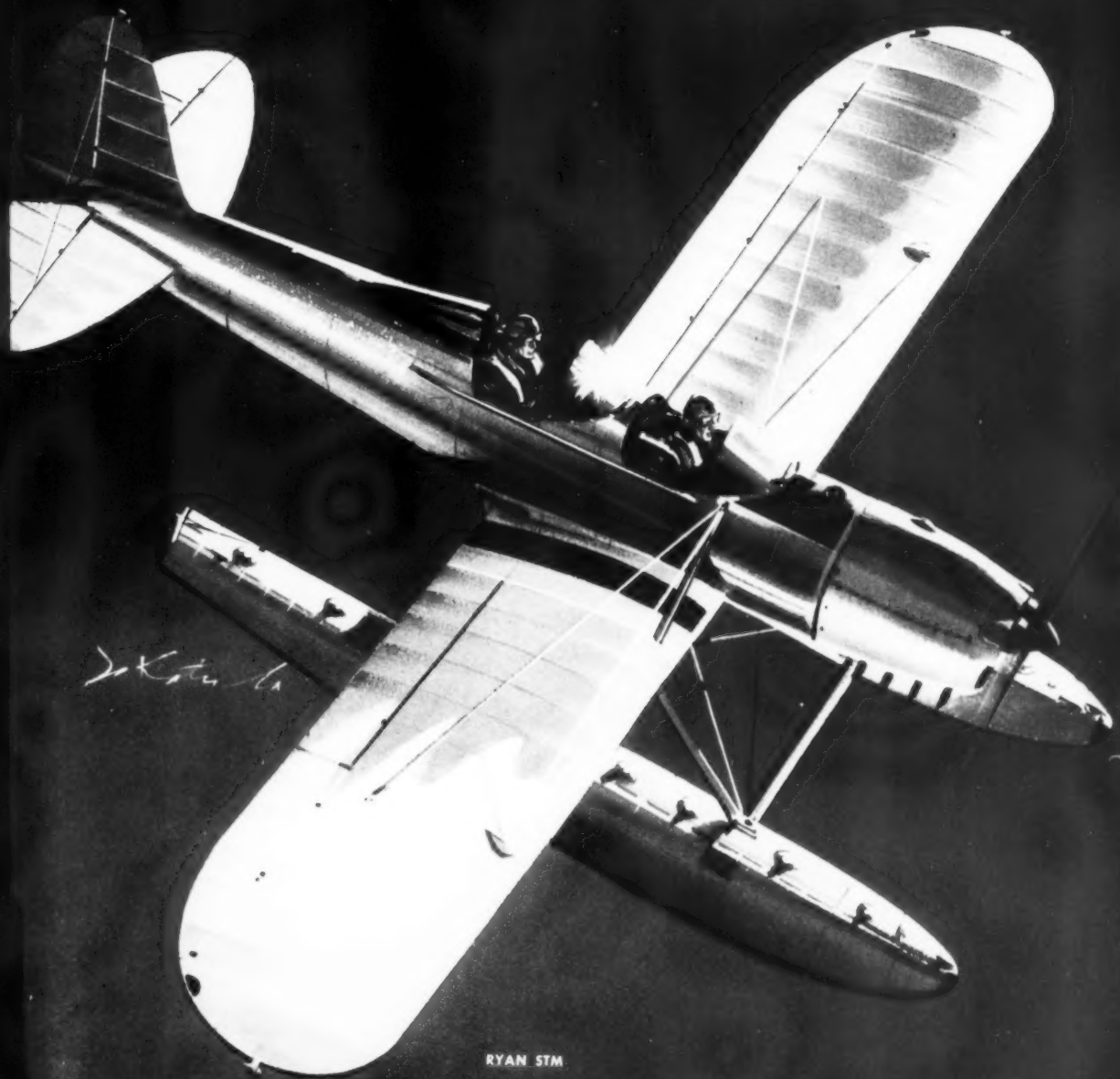
1959 NATIONALS STORY

Picture coverage by Gilliam

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November 1959 — 35 cents



RYAN STM

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STRAIGHT:



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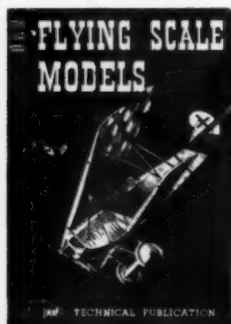
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P. G. F. CHINN

Foreign Notes

Canada

Particularly significant following the excellent showing of the American and Canadian teams in the recent World Wakefield Championships, is an article in the Montreal Model Flying Club Bulletin under the heading "Keeping Ahead."

In this, the plea to "be prepared" in FAI flying is backed up by a suggestion that, today, if a man has pretensions to a place in his country's team for the Wakefield, Nordic or Power Finals, he needs to start the season with four models of the same design. These should be well-used ships, not models completed a week or two before the eliminations, which have logged little flying time and in which doped surfaces are a long way from achieving the permanent set that is a pre-requisite of consistent performance. Few experienced contestants will argue with this reasoning.

Germany

Germany's Nationals are divided into two separate meets, the first for all control-line events, the second, (this year held the following week-end) for free-flight and radio-control.

In this year's UC meet there were seven events, namely: Stunt, Combat, FAI .15 Speed, Jet Speed, Scale, Teamrace, and Scale Teamrace. Hermann Oswald of Bavaria won the stunt from Udo Doering of Northrhine-Westphalia. Last year's stunt champion, Horst Diemer, placed 6th and an indication of how closely the event was contested is contained in the points results, only 21 points separating the first six. Diemer atoned for his defeat by winning the jet event and setting a new German record of 220 Km/hr.—136.7 mph.

Helmut Gorzica took the FAI .15 cu.in. speed class at 178 Km/hr. (110.6 mph.) using an Italian Barbin B.40 motor and an American Tornado 6 x 8 prop. Combat was won by Jurgen Nieder of Hesse.

The scale event was won by Siegfried Jaschinski, with the ever-popular P-51. Novelty in this event was the entry of 3rd place winner Peter Bolten, who had a formation of three Messerschmitt Me. 109's coupled together with Plexiglas rods. Controls were arranged to work flaps on the leader and elevators on the two others. The FAI teamrace was won by the team of Lenzen and Schnorrenberg from Northrhine-Westphalia in the excellent time of 5:23.8. Ziegler and Kroger won the scale teamrace in 6:56.8 with a Miles Hawk Speed-6.

The free-flight and radio meet was held on a large airfield near Ingolstadt in upper Bavaria. The number of entries was limited to a total of 320—270 for the free-flight classes and 50 in RC, these being divided between the various states on a quota system. This appears to work quite well ensuring a high standard of flying and imposing less of a burden on the organization. There were nine FF and four RC events. Condensed results as follows:

Nordic A1 glider won by Karl Gilzmet, 761 secs. Nordic A2: Willi Oberdorf, 1700 secs. (10 flights). Tailless Glider: Karl Wilke, 599 secs. Wakefield: Gunter Rupp, 1762 secs. (10 flights). Tailless Rubber: Helmut Schenk, 429 secs. Gas (.06 cu.in.): Emil Pelz, 708 secs. Gas (FAI): Hans Beck, 1698 secs (10 flights). Tailless Gas:

(Continued on page 38)



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*single channel,
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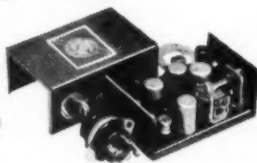
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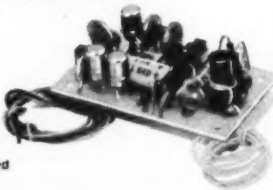
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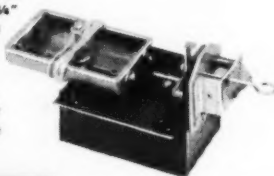
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31st Year of Publication MODEL AIRPLANE NEWS

JAY P. CLEVELAND, President and Publisher

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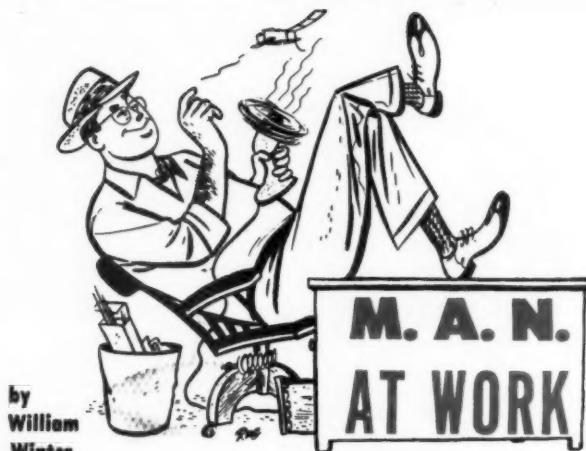
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by
William
Winter

► Getting so—Nats, Wakefield, Canada's scale contest—that a man can't get a word in edgewise. For this issue, the guard hid the continued line at the bottom of this page—puts us on a word diet along with Lorenz.

Overshadowing all news this month, if you dig contests, is Jerry Ritz's tremendous win in Nordic. In a five-man fly-off he topped Sokolov, the Russian; Habib, Pakistan; Tahkapao and Kekkonen, Finland. Sokolov is a doughty competitor but Ritz got the jump in the fly-off—as first man up he was handicapped since no ships aloft to reveal thermals—by allowing one thermal to drift by just before the six o'clock gun, then towed for several city blocks to meet the next thermal. The 1½ minutes drift gained kept him in sight longer than the Russian who immediately towed into the same thermal. Jerry went 401 seconds. Sokolov 329.

It ought to be realized that the modern Nordic, and flying technique, is highly developed. Jerry's story in the December issue, and plans later, will impress all of us with the benefits of hard work, sustained thinking, and even physical conditioning.

At 44 years of age, Ritz has the bounce of a rubber ball. Runs a swift mile every morning. Paid off, he said, on that last launch! Checked 400 airfoils with ratings for three velocities. Put in 150 last minute test flights the week before leaving. Ninety more on two days before contest. With Wiehle and Sifleet, his fellow team members, timed thermal sequences for two days in Belgium. These guys know by cool and warm air on their necks when thermals are coming and, more important,

when they are ready, with lift right off the ground. Jerry's previous three trips to Europe—gave him experience in feeling light European thermals on his line that our boys, used to US updrafts, tow right through. Wiehle's test flights impressed Jerry no end, but 721 seconds got him only a 30th. Sifleet's 677 seconds were good for 39th. The boys placed fifth as a team.

In flying against these international wizards of gliding, we can be proud of fifth team place. Sifleet and Wiehle made it possible. The Finnish team who captured first, had 14 maxes out of 15 flights. Question: Do we have more like Ritz?

Ritz's first was deserved, but no cause for boasting. He has demonstrated what it takes to compete on an equal footing with foreign Nordic experts.



NEXT MONTH'S COVER Ritz and Nordic

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PLANE ON THE COVER

Longtime favorite with modelers and a "classic" airplane, the metal Ryan ST, with fabric-covered wings and tail, is depicted here by artist Jo Kotula, as the STM version with Edo floats. Used by the military as a trainer, Menasco 125 hp landplane topped at 150 mph. Climb was 1200 ft./min. Span was only 30 ft. Highly aerobatic.

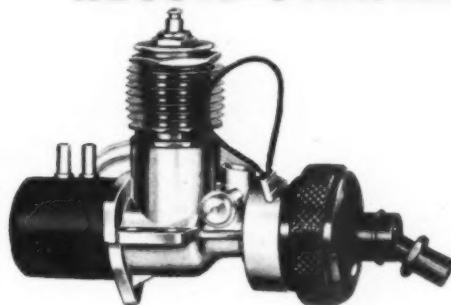
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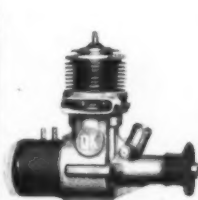
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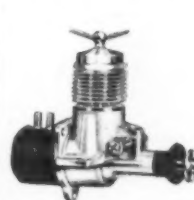
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by PAUL GILLIAM



For NAS Los Alamitos it was third Nationals. Since '48, NAS Olathe, Navy annually has been

host to the big meet. Portion of crowd watching exhibition model flying final Sunday afternoon.

(Editor's Note: With the Nationals only a week off, photographer Gilliam broke his left leg in a fall. Equipped with a fibreglass cast and a motorized wheel-chair, he completed his assignment. With story still unwritten, Paul tripped on his crutches, landed back in the hospital with a broken arm—fortunately not the pencil-pushing mandible. The story that follows is Paul's—with assorted assists from the wee people who, unknown to our hero, followed at a respectable distance.)

The 1959 Nationals

With 80 percent of the entrants from west of the Rockies, 28th National Contest, July 27–August 2, NAS Los Alamitos, Calif., had strong western flavor.



To win Junior and Open (also Grand) Championships, the Hunter father-and-son team flew all these airplanes. Note proto job near the center.

Below—Three of the four big-time trophies ended on the Hunter mantle—well braced, we hope. Bob designed the Satellite (January '59, MAN).



► Cast, baggage, and writer arrived at the Los Alamitos Naval Air Station at 5 pm on Sunday, July 27, after a hairy freeway ride of 40 miles south of Los Angeles. The Navy personnel aboard the station had everything in absolute order with the chow hall open and half of the better-than-a-thousand contestants were chomping into fine home-style frankfurters, beans, and boiled potatoes . . . vanilla cupcakes with raspberry sauce . . . a pear and an apple that the guys could chunk in their tool box for next day's ten o'clock hunger break.

The Navy thinks of everything. This goes for all the officers and men of the Los Alamitos Naval Air Station. It was a fine chain of command from Rear Admiral Allen Smith, Jr. down to the fuzz-faced sailor who wore out his arm at the main gate as he waved the fliers in and out, while their models drifted northeast from the flying ramps toward the town of Anaheim and Walt Disney's Matterhorn.

The 1959 Nationals were so very well operated that few, if any, fliers have a bitter after taste. That is, if, while chasing their free flights through the farm land, they robbed the right fruit from the orange tree. After a chase through the groves to retrieve his high thrust-lined bomber, one modeler stated that he surely would be sick by night-fall from eating so many oranges. Another puzzled contestant, an "easterner" naturally, Ray LaHood, Topeka, Kan., climbed a tree only to find the oranges green, marble sized and very sour. The irate farmer spotted him in the top of his tree and promised not to call the law if Ray would run his engine for his nine-year-old boy. Without battery and fuel in his pocket, LaHood was in a



Forty-four of the 50 Air Youth State Champions, sponsored by Hobby Industry Association. Boys

took back 70 awards, including Senior Championship. Trips—by air—expenses paid by HIAA.



Using Sailplane wing and tail, Class B FF, got off fast for Harry Gould. Total 21:27 won first.



Bob, and dad, Carl Goldberg, with Bob's "rocket" entry. Jetex is a rocket-principle device, but safe. Carl attended every Nationals.



"Mr. Multi," Bob Dunham, with his modified Astro Hog. Dunham flies fast, precise, flits from maneuver to maneuver. Practices plenty.

1959 Nationals . . . continued

jam. But tree climber and farmer parted good friends. Ray LaHood now knows all about oranges and a local hobby shop undoubtedly will sell farmer and son a shiny new go-powered noise maker. Most out-of-state modelers now know there are two kinds of oranges . . . the Valencia and the Navel. A sweet orange on a tree in July is a post-mature Valencia that should have been picked in the spring. If it is marble-sized and very sour, it is a Navel and not pleasing to eat until Christmas.

► It was a furious and fast meet with many hot fliers. The Nationals always are loaded with local entries no matter where the big meet is held geographically. This year, nearly eighty percent of the contestants came to Los Alamitos from west of the Rockies with almost half from California alone. However, there was at least an entry from every state including Alaska and Hawaii—thanks to the Hobby Industry Association whose aeronautical section raised \$15,000. There were 50 Air Youth State Champions flying in the meet. They got there by air, expenses paid. And these young men won their share of the golden hardware! Bill MacMillan, Jr., Executive Director of HIAA, served as coordinator.

The 50 "champs" always could be quickly spotted thanks to the dark blue T shirts. For special press appearances, they wore official dress blues supplied by McGregor Sportswear of New York. Seventy awards were taken by the Air Youth Champs, including the senior championship by Sherwin Maslowe, from Michigan. One overzealous lad



Sherwin Maslowe, National Senior Champion, with functional rubber model. HIAA Air Youth Champs eliminations excluded the Open class.

who wanted to do nothing but fly, had Mac pulling his hair—one of the nation's biggest cities got no local tie-in stories as a result. Future champs, take note.

► Burning everything from straight nitro to Arkansas applejack, the speed boys generally were off last year's times. High humidity. Bill Wisniewski whose mastery of the 19's is well known turned 134.07 in A Open, almost 15 mph better than second best Leland Morton, chased by Jim Nightingale, Gene Stiles and Dick Elliott. Topping Senior



Dane Vincent and son Danny Lee. Unusual aspect of '59 Nats was the large number of father-son teams. Over 100 combinations competed.



Stiff cross wind to keep lines taut, Ray Hill's Navy Carrier entry seems well lined up for deck landing. Event traditional at Nats.



Spitfire stunt model, Dennis Alford. Dennis was one of youngest fliers old Plymouth Internats.



Riley Wooten and stunt model. News of 15-sec. kill in combat spread like wildfire. Whatizit.



Norm Deitchman's SE-5 (MAN, May, 1959) gets approval of Johnny Brodbeck. 2nd scale points.



Hot runways too much for tired Don Chaptin, Jr., found asleep at 4 p.m. with Dad's tool kit a bumpy pillow. Kids had wonderful time.



Dry run for the Tournament of Roses Parade, unique "float" featured Paul "Long John" Gilliam, history-making cast and MAN camera.

was Larry Grogan at 118.06. What does Wisniewski burn -glow fuel?

Ed Rankin in B Open was only a few miles faster at 138.73. A 154.18 speed took C Open for Jim Nightingale but a promising lad, 15-year-old Larry Polk, Jr., snagged sensational 151.71 mph in Junior. Jet (Summersett-Open) squeaked out a 160 plus, and 92 plus, was best 1/4A, (Bill Brooks, Senior).

► Some yo-yo's go round-and-round. Others loopy-loop.

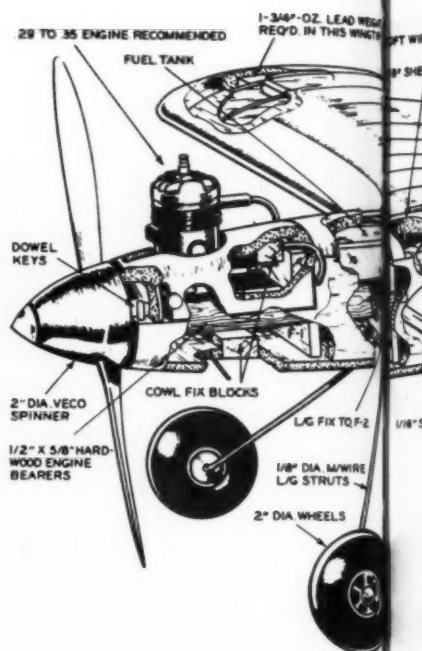
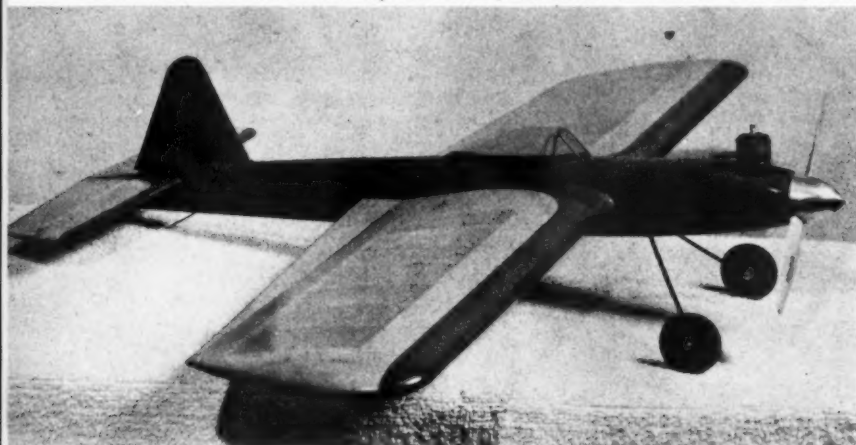
Perennial stunt champ, George Aldrich among the missing two years running, but the grand old man himself, Bob Palmer, Thunderbirded his way to victory with, at long last, a new gimmick for stunt ships. Differential flap action! Watch the scramble now! But what gets us is the score sheet showing Senior (Bill Werwage) and Junior (John Cudvagen) with higher points than the master-608% and 556 2/3 respectively to Bob's 554. Say it isn't so. Judges, maybe? So, speed (Continued on page 44)

Stuntacular

by DALE KIRN

On a 125-foot line, Mono-Line stunter makes diehard free fighters drool. On a "short" 70 footer, smooth.

Looks a little like slimmed down Japanese Zero. \$1000 Stanzel offer Mono-L stunt win, Nats.



Clean, functional ship has been widely demonstrated by author Kirn. Loss of line tension does not cost control or require wild sprinting.

► Here is a stunt job that is just "a little bit better." The design is fairly conventional, but a Mono-Line stunt control unit gives added snap and dependability.

Some of you may have seen Stuntacular perform demonstration flights last year at the Nationals in Glenview. This is how the plane was built and what you can expect from it.

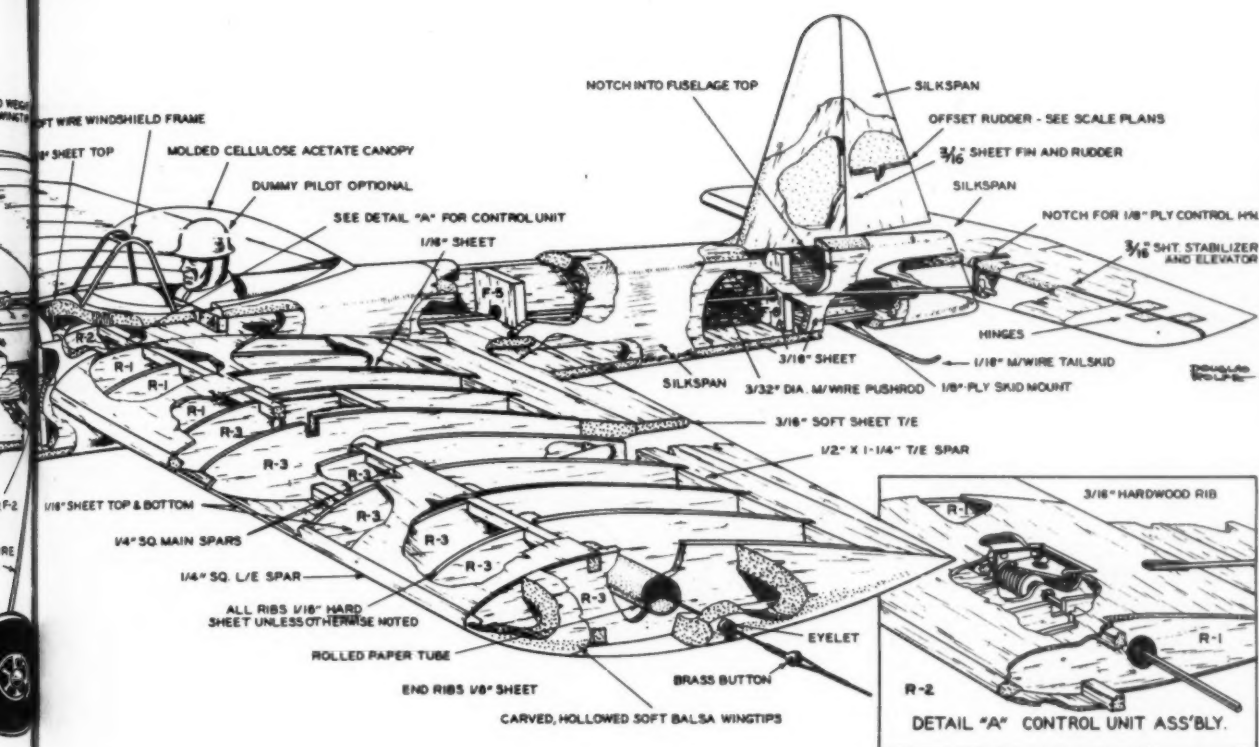
Stuntacular is not a plane for the beginner. It was de-



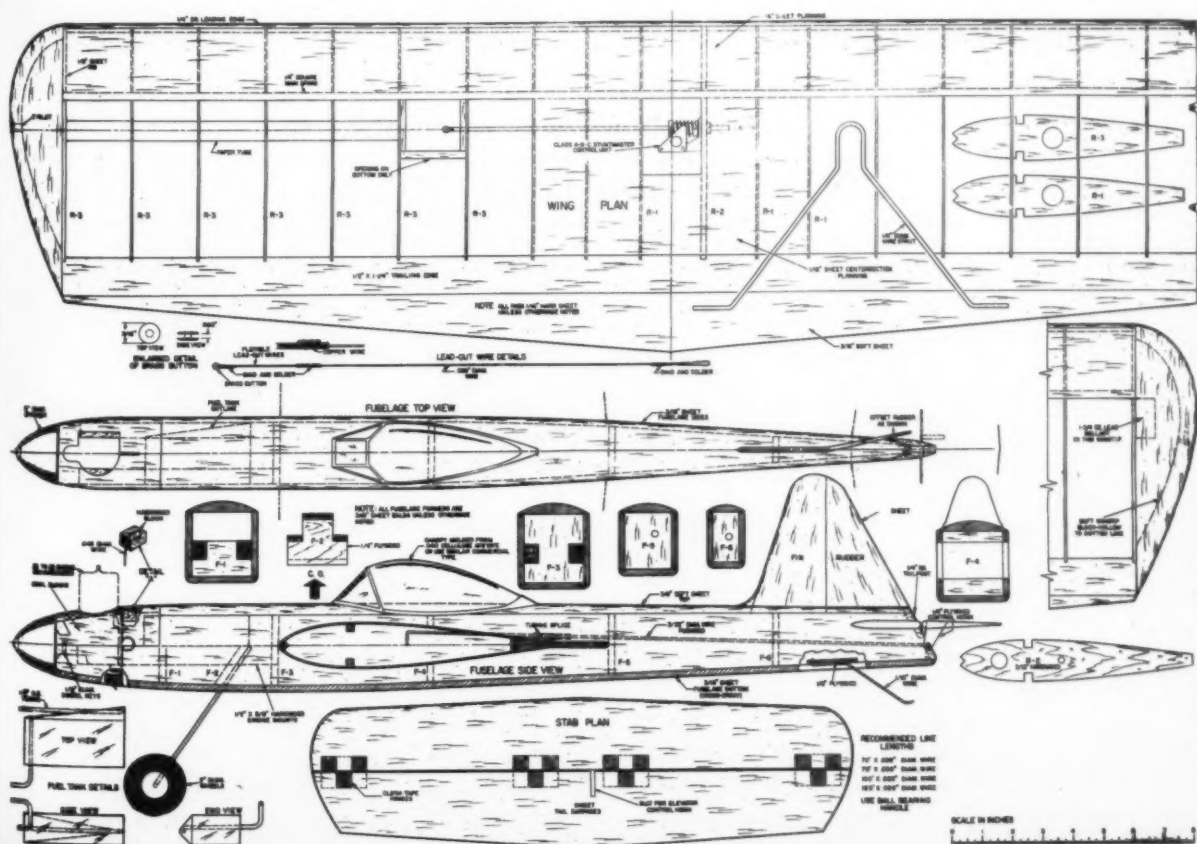
Front end showing Fox .29 behind spinners, bent forward pressure vent for tank. On long lines (and all uikes) stay away from power lines.

signed for the stunt flier who is seeking perfection in performing all the maneuvers that are required for competition flying. Construction is as simple and as strong as possible. A Fox .29 was used for the power plant (a 35 engine can be used for long line stunt flying).

The amount of elevator action is limited to 30° up and down. You will find that this amount is more than enough to do all the required maneuvers (Continued on page 52)



Doug Rolfe cutaway drawing emphasizes skillful structural design. No useless gee-gaws.



FULL SIZE PLANS AVAILABLE. SEE PAGE 58.



No coveralls and grease for mechanic Gail Randall who "crewed" the Grumman Avenger for Bill Currey in the control-line scale event.



What would a Class B Starduster look like? Now you know. This job by Ray Van de Walker, took second in open. Taibi design, Johnson.



Four years went into Bill Krecek's Robin, got top points. Two-speed Hornet. Cracked up, alas.



Huge Hornet-powered Half A, Frank Newquist. A 500 sq. in. wing. Still shows that it can VTO.



All-time great, Denny "Hogan" Davis, who flew a new design, "Bean Bomber." A bottom fin.

Thousands of models in dozens of classes compete in the "big meet." In this picture



Going out on a wing and a prayer! What looks to be cargo clipper variation flown by Jim Kelly.



Not one, but two swift winners, by Fred Carter, Wichita Falls, Tex. Both operate on Mono-Line.



Wayne Pratt, Topeka, Kan., with real looking jet for PAA Load. Pratt's design was an original.



Ken Willard, left, with big Gasser that topped Intermediate, and Paul Refsell, R, Sr.-Jr., Rud.



Something new in ukie scale, Fairchild F-27 on two Torp RC's. Elbert Putan Sr. winner, in ukie.

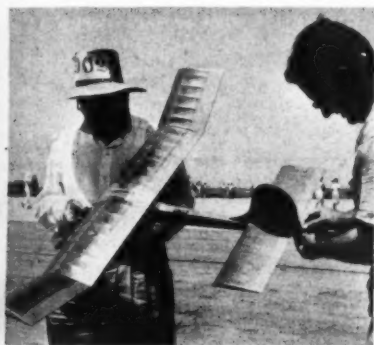


Men on wheels, Larry Grogan, great UC designer. This time a proto win at 122.07. Fox .29 powered speedster flown by Ken Knotts, R.

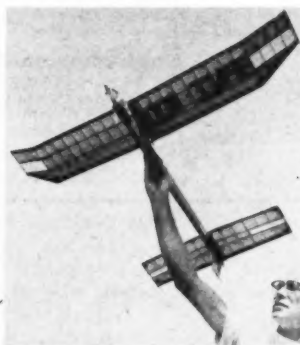


Seventy wins copped by HIAA sponsored State Champions (50). Leroy Polk, here, first in C speed and new record of 154.71. McCoy .60.

the Nationals



Modeling since 1917, C. O. Wright, always high in Cargo Clipper. Son, Bob, helps. Took a 3rd.



Another bottom-finned design, Space Rod, Victor Cunningham. Ship in pic topped Half A Open.



Truly beautiful Stinson .049 entered FF scale by Del Swartz. Fine structure and good finish.

sampling, are shown some winners and their airplanes, a few startling designs.



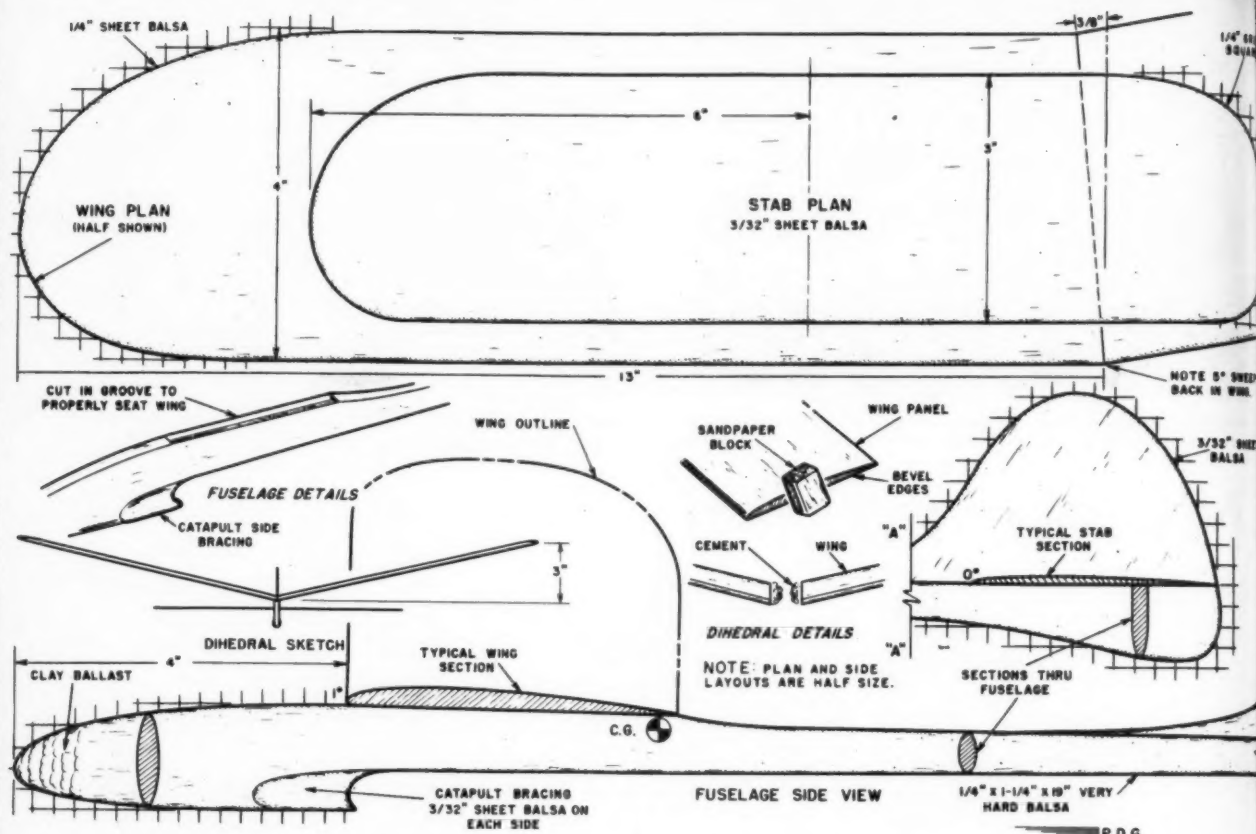
Put another wing on the Astro? Fred Dunn, Astro designer tried it. Span 54 in., weight 7 lbs., area 750. Orbit 8, powered .45 K & B.

Fantastic climb, stability and fine glide exhibited by Glen Spickler's weirdy. Hand launched glider wing. 180% tail moment arm.



Below—Bud Romak's original "Bulah." Powered by Mac .60, it had span of 10 ft. 8 in., 1340 sq. in. Planform like Foote Westerner.

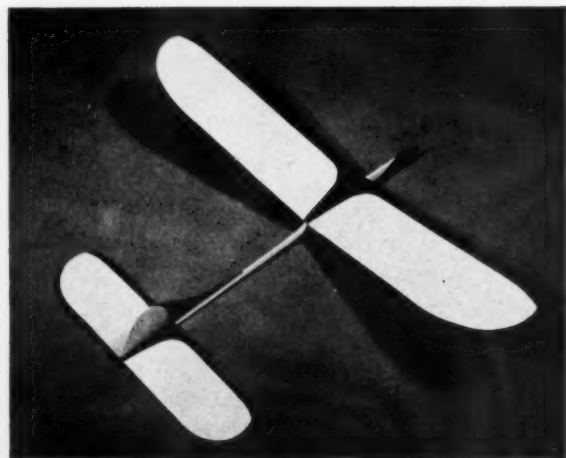




To double half-size plans, connect grids, make new grid with doubled squares, count off intersections outlines with grid lines, draw in.



Props, engines, and rubber arms far outclassed by this zooming launch. Below—Just an ordinary glider, little stronger perhaps, but simple.



Whistler

by PAUL E. DEL GATTO

Catapult glider does 2½ minutes—effortlessly. Just be sure to keep eye on it!

► The larger gliders are fun and really fly, but are too hard to throw high.

The solution? A rubber catapult! The rubber catapult never complains.

The Whistler is the outgrowth of several successful hand-launched designs, large and small; redesigned to the requirements of a successful catapult design. It is completely "debugged," and capable of top notch performance with little skill required.

Flights of two to 2½ minutes are average with a modest catapult launch; but, once acclimated, you can average around three minutes with a more powerful catapult. Whistler is susceptible to out-of-sight flights. After losing an earlier model we have since made use of a fuse-operated, nose-ballast drop-off. This or other similar methods to bring the model down before it leaves the county is heartily recommended.

Construction: Construction is beefier than a conventional hand-launched type. In selecting the balsa stock, the wing and tail surfaces should be medium hard, while the fuselage is cut from very hard balsa.

Other than the proper selection of wood, strongly cemented joints are important. During the launch on a catapult, there is a terrific strain (Continued on page 60)

Radio Control News

by EDWARD J. LORENZ

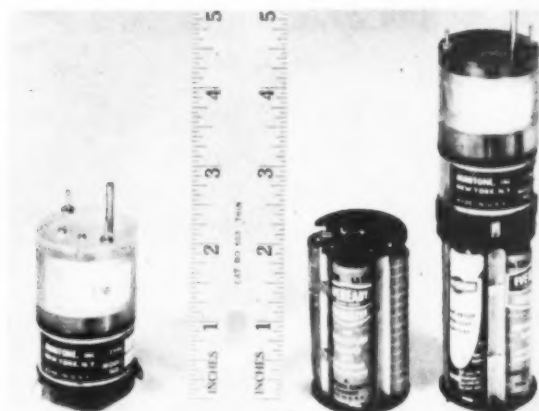
The Nats are over and the woodchucks again into hibernation. But don't you guys ever give up? CQ! CQ!

Waveguide, winner Aussie Nats, '58; 3rd, '59, by W. Eunson, Victoria. Glow Chief .35, home-made Hill rcvr, compartments for parachutes as well as bombs. Note the sockets for checking.

► Due to coverage of the NATS this month, our column will be held to the bare essentials.

At a recent flying session in Poughkeepsie, N.Y., Ed Chapman suggested we try some DLA (Don't Look Around) flying and approaches. With over 300 flights on Breezy Jr., we had nothing to lose and, when George Buso had launched the plane, we turned our back as George talked us into a pattern and then into a landing pattern. Being "chicken" on this first try we brought it in CFR from about 50 feet. Real interesting and maybe this idea will catch on, if only to break the monotony of regular flying. Be sure your ground control man knows port from starboard!

Mr. William Deffner of the Lakeland RC Club, Waukesha, Wis., advises their 6th Annual contest was a huge success, with 82 registered contestants. Twenty more were turned down due to lack of time. Winners were: Ed Kazmirski, Calumet City, Ill., 198 pts., Multi; Bill Wischer,



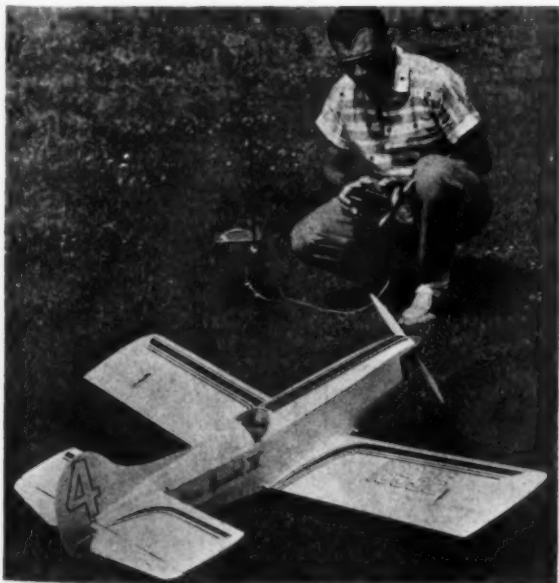
Minitone Torque Converter, Speed Control units can be supplied with battery packs on motor-and-gear assembly. Various reduction.

Delafield, Wis., 50 pts., Intermediate, R. H. Hansing, Minneapolis, 78 pts., Rudder; Bob Wischer, Delafield, 54 pts., Scale; and John Krauer, Detroit, 203.2 seconds, Pylon. Seven states were represented.

Photo shows the Ross Special IV built by Mr. E. A. Ross, 210 N. Louis, Mt. Prospect, Ill. Ed's other three models preceding this were said to be "hot" but not enough to please him. This model has a 400 square inch wing, weighs 5½ lbs., including the 15 coats of white and bronze, hand-rubbed Cooper Aircraft Butyrate dope. A Torp 45 RC pulls it and a Bramco-8 and Steeb servo compile the RC gear. A member of the Chicagoland, Vanguard and Northwest RC clubs, Ed's prime ambition is to capture the FAI speed record.

Photo shows the Waveguide which won last year's RC Championship and placed 3rd this year, for Mr. W. Eunson, 30 Albert St., Footscray, Victoria, Australia. The engine is an Australian Glow Chief 35, receiver being a home built Hill job and the fuselage has compartments for housing parachutes and flour bombs.

A quick trip around the country brings out the following: two thirds of the multi jobs at the NATS were Astro-Hogs; Neil Carr of the Aerial Robots has a huge Fokker Triplane with a Spit 65, (Continued on page 34)



Fourth in series of Ross Specials, by E. A. Ross, Mt. Prospect, Ill., has 400 sq. in., weighs 5½ lbs., Torp 45, A Bramco "8".

Ramrod 600

by RON ST. JEAN

How noted designer converted typical .19-.23 job to new rules for .15's. Plans for new-rule design.



What the new rules did to free flight: Ron holds, left, the "600" and, to compare size, the "432" which used a .15 for FAI in 1955 season.

► With the announcement of the 1959-60 AMA rules, many free-flyers have raised the question of how to best cope with the new power loading, which has been raised from 100 ounces per cubic inch minimum to 173.4 ounces per inch.

We feel that a gradual, rather than abrupt, change will be made in designs to conform to the new power

loading. The first phase in converting will be in the direction of utilizing older models. Half A's will be loaded to 8½ ounces with perhaps an extra section being added to the wing, 19 jobs will drop to 15's, and 29-35 models will utilize 19's and the new 20's. It is felt that this is a logical interim change, in that it permits the use of already existing equipment.

The purpose of this article is to show how a Ramrod 600, designed originally for 19's and 23's, was first adapted to the new rules. In our case, we simply reshaped a 600 built one year previously. You may wish to take advantage of the availability of full size plans to build your first 600.

In converting the 600 pictured on these pages, we first pulled the radially mounted 19, mounted the gear on its own plywood bulkhead, cut two holes in the old firewall to accept hardwood mounts, and finally bolted a new Cox "Olympic" 15 to them. With this hot engine, maxes come almost as frequently as they did with a 19 pulling a model weighing two ounces less.

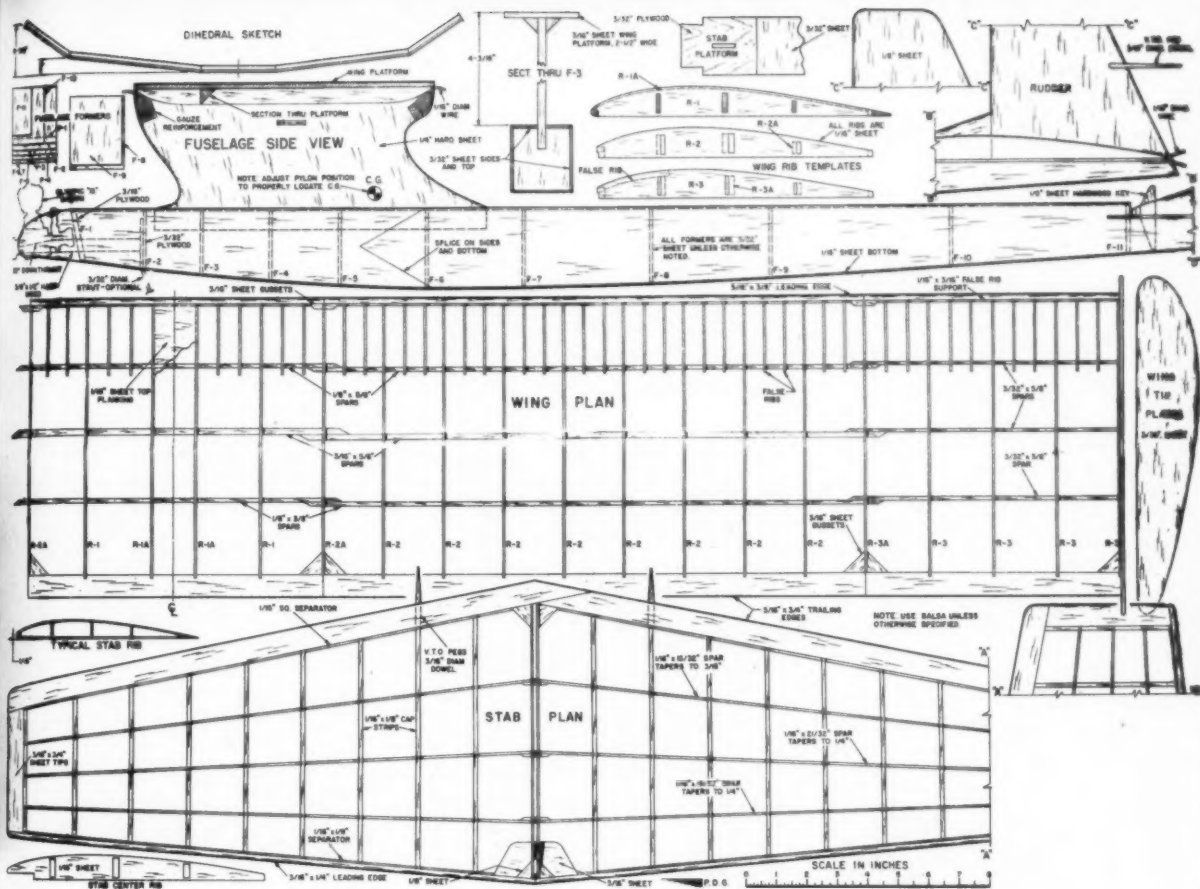
Except for a slightly longer fuselage, the Ramrod presented here is aerodynamically the same as those flown four years ago. Most other changes are of a structural nature and were dictated by experience. Wheels were found to be unnecessary. (Making a conventional ROG with just a strut convinced us of this.)

It might be well at this point to pass on something else learned by experience: Ramrods seldom break up, but when they do it is generally because of a lack of decalage, or incidence, the model zeroing out, so to speak. For this reason the Ramrod CG has been moved



Smiling at the "big" job for '59, Ron says it gets in maxes almost as easily as old .19 ship,

which was same size. Fuselage length increased slightly. Take-offs easy on single strut gear.



ahead to 80% of the wing chord back of the leading edge. This will insure a little more decalage. Also, it is highly recommended that no plasticizer (castor oil, TCP, etc.) be added to the dope to retard shrinking. A great deal of any surface's rigidity is in the covering, and we do not want a very flexible surface... Here is why: The center of lift of most wings is behind the center of

structural strength, or bending line; so, as the speed of a model increases, there is a tendency for the wing to flex in the direction which will reduce decalage and cause the dive in. This tendency is predominant on lightly built, lightly doped, hot airplanes which are trimmed to nose up only a negligible amount under power. Such models may be successfully flown for months, but it may

take only one hot, sultry morning, which will loosen the covering a little to result in their demise. To summarize then, keep the covering tight and use enough incidence to effect a definite nose-up tendency under power. This suggestion applies to any contest free flight model.

Construction of the 600 is similar to the 250, ex- (Continued on page 51)



To increase nose length and convert to Cox, Ron ran hardwood bearers through old ply firewall, just bolted the "Olympic" to 'em.



Ron fires engine for one of numerous test hops in investigation for this plan and article. New wing has full ribs, no half ribs.

WHEELS TO FLOATS

by JOHN A. WICK



Sterling Monocoupe with floats described in the article. "Full house" control giving up flipper

on take-off made for most realistic water skimming climb-outs, breath taking flare-outs.

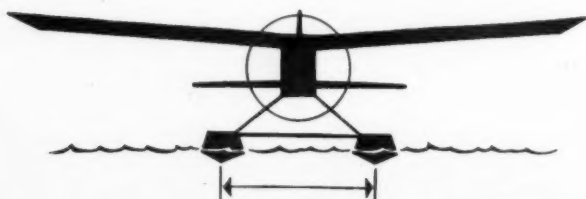
Flying sites beyond counting, are yours for the taking. Just use these practical tips to make a seaplane out of old sod buster. Really set, if you have a boat.



When floats are mounted at too great a negative angle, tips tend to dig in as speed increases, plane becomes directionally unstable —



Floats mounted at positive angle cause rear ends to sink as plane accelerates... unable to get on "step" —



If floats are spaced too widely, model tends to veer directionally... Floats too closely spaced make plane "tippy" in wind —

► In the Buffalo area we travel about ten miles to the local flying field, or, more aptly named, spot-landing field, for when we arrive we are greeted with a Nike base on our right, a peach orchard behind us, and a beckoning set of wires to our left. On the other hand, three or four miles away, there is a flying area three-quarters of a mile wide and ten miles long, the Niagara River. Hazards such as trees, wires and thermal activity are eliminated, guaranteeing a longer and more useful life for an airplane provided it is a float plane. Perhaps you, too, are plagued with the problem of hard-to-find flying sites?

A few precautions must be taken to insure success in modifying a land plane to a float plane. Making the ship watertight is most important. Saran Wrap, secured with Perma-Cell tape over all cabin areas and radio gear provide good protection in these areas. Vaseline applied regularly to torque rod bearings works well in these hard-to-seal spots.

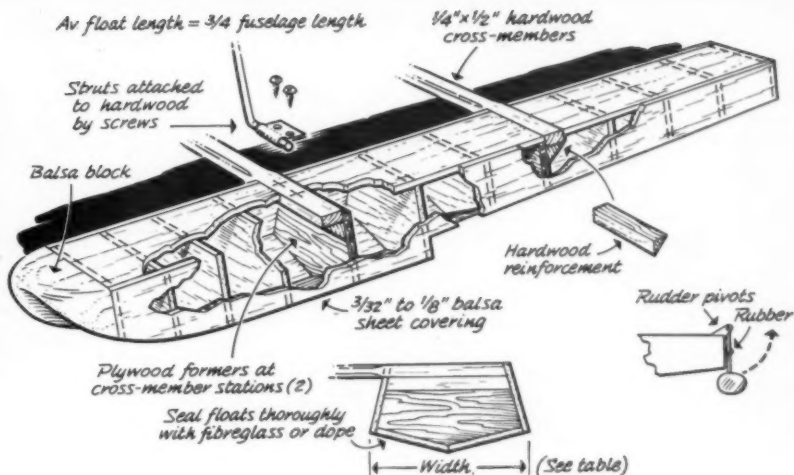
If added protection for radio components is desired, a box can be constructed and the lid sealed down with plastic tape or rubber bands. The receiver should be pre-tuned and there should be some external source provided for checking battery voltages. An ordinary baby bottle nipple glued (Plio-Bond) over the switch gives adequate protection.

Although we have had no difficulties with water-logged radio equipment, we have taken some water in the fuselage. The chief source of this trouble was the hole in the firewall for the throttle wire. When using an escapement for motor control, this opening has to be wider than normal due to the concentric action of the actuator. The best thing here is to apply three or four coats of clear dope. Incidentally, if you are now building a plane and contemplate installing pontoons, this doping procedure on the fuselage interior is added insurance. There is always a chance that you might lose a wing or your plane become the victim of a nearsighted motorboat fan.

In the transition from wheels to floats retrimming of



Single-channel and rudder-only proved satisfactory on Berkeley Cub and a little Sterling Cub.



the plane will be necessary and dunkings are quite possible. If the ship is not completely waterproofed, it will pick up considerable weight in the retrimming process. The only thing you can do then is wait for it to dry out and hope it doesn't take on a banana shape in the process.

If a modeler is prone to radio difficulties or periodic interferences in his area, he would do well to fly his plane over water. Water makes a nice cushion as we proved to ourselves while flying a J-3 Cub last season. The plane was maneuvering nicely about 300 feet up when, for no apparent reason, it locked into a full right-rudder position. It made a splash, but in the time it takes to start a water soaked engine and check the receiver, we had it in the air again. Had this been over land, we would have been wondering what color to paint our next project. The Cub flew two seasons on floats with nary a scratch and only one changed propeller.

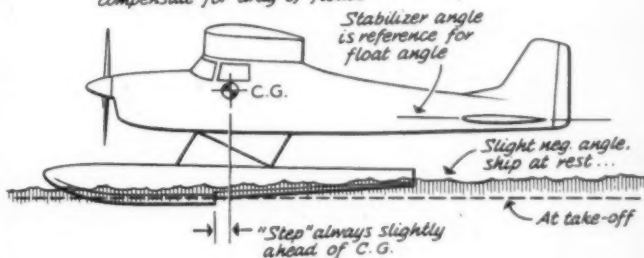
Take-off runs with the Cub (rudder and motor only), were from 15 to 30 feet depending on the water surface. A slight breeze causing small ripples shortens the run considerably as it reduces the suction of the pontoons, much the same as in full scale sea planes.

A slight bit of up trim is necessary to compensate for below the thrust line drag of the pontoons. Angular setting of the pontoons in relation to wing and stabilizer incidences is very critical and here a little experimenting is in order. As these settings vary with the type ship used, no cut and dry rule can be applied. We shall, however, attempt to illustrate a starting point.

It is best to begin with the float tips approximately five to eight degrees negative in relation to the stab angle and work down to the minimum angle necessary for good take-offs. The drawing should clarify this. Shims of 1/8 in. hardwood, inserted between the rear mounting brackets, facilitate these adjustments. Here is why these angles are so important. If for instance, the floats are level with the stabilizer, as the speed of the ship increases and the stab rises, the plane is riding on the forward section of the pontoons. This is to be avoided because it causes erratic water looping tendencies much the same as a too far forward landing gear on a land plane. On the other hand, if the float tips are too high, causing the rear portion of the pontoons to dig in as the plane accelerates, the plane will be unable to get on the step, making it impossible to pick up speed rapidly enough for a take-off.

When the happy medium is reached, the ship will accelerate rapidly, rising on the step anywhere from 10 to 20 feet from release. Once on the step, the tail end of the floats should just be touching the water in order to maintain a straight line run. The step should be at least one-half inch ahead of the center of gravity and never behind it. We suffered many a (Continued on page 40)

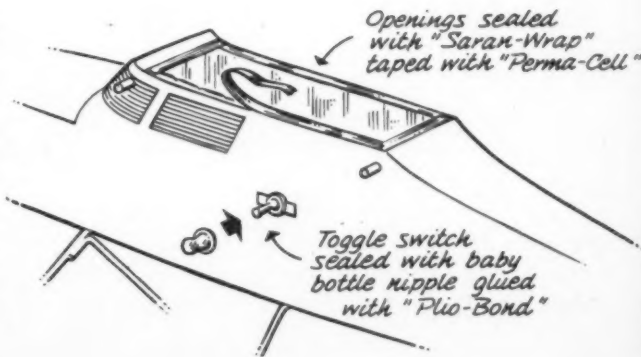
Move C.G. rearward slightly to compensate for drag of floats



Recommended TWIN FLOAT SIZES*

Kit Model	Wt., lbs.	Length-Width
Berkeley Cub	5	30" x 2 3/4"
Sterling Monocoupe	5 1/2	30" x 2 3/4"
DeBolt Champ	6	30" x 2 3/4"
Aero Nine	2 1/2	22" x 2 1/2"
Smog Hog	8	30" x 3"
DeBolt Rebel	3	22" x 2 1/2"
Breezy Sr.	6	30" x 2 3/4"

* Flight tested





Frantisek Dvorak, Czechoslovakia, waits for signal gun announcing the seven-man fly-off has begun. He flew Radoslav Cizek's design.



The US team, L. to R., Joe Bilgri, Herb Kothe, Bob Hatschek. All placed in first ten, Bob participating in fly-off. Team trophy.



Long fuselage and small stabilizer, Stanislaw. Zurad, Poland, 2nd last year, fourth in 1959.



Ex-Wakefield winners Bond Baker, L., Alan King, both Aussies, in a tense moment—luck-ran out!



Ivannikov, of Russia, smiles at Bilgri's prop. Joe's props have been internationally famous.

World Wakefield Championships

by P. G. F. CHINN

On July 19, the USA came within 20 seconds of winning both individual, team trophies. Trophy goes to Czechoslovakia.



Kothe winding as Hatschek holds. Herb last year models. Interesting shot reveals tapered wing planform and the Vee dihedral.

► In 1953, America won both the individual and team awards in the Wakefield Cup contest. On July 19 this year, the U.S. came within an ace (20 seconds in the fly-off, to be exact) of repeating this achievement, winning the team event and placing second to Czechoslovakia in a seven-man fly-off for the individual results.

This, following several years in which U.S. fortunes in World Championship events have been at a low ebb, is welcome news. For the past three or four years, we've done poorly flying against the experienced modelers of Europe, particularly those of the State-aided modeling

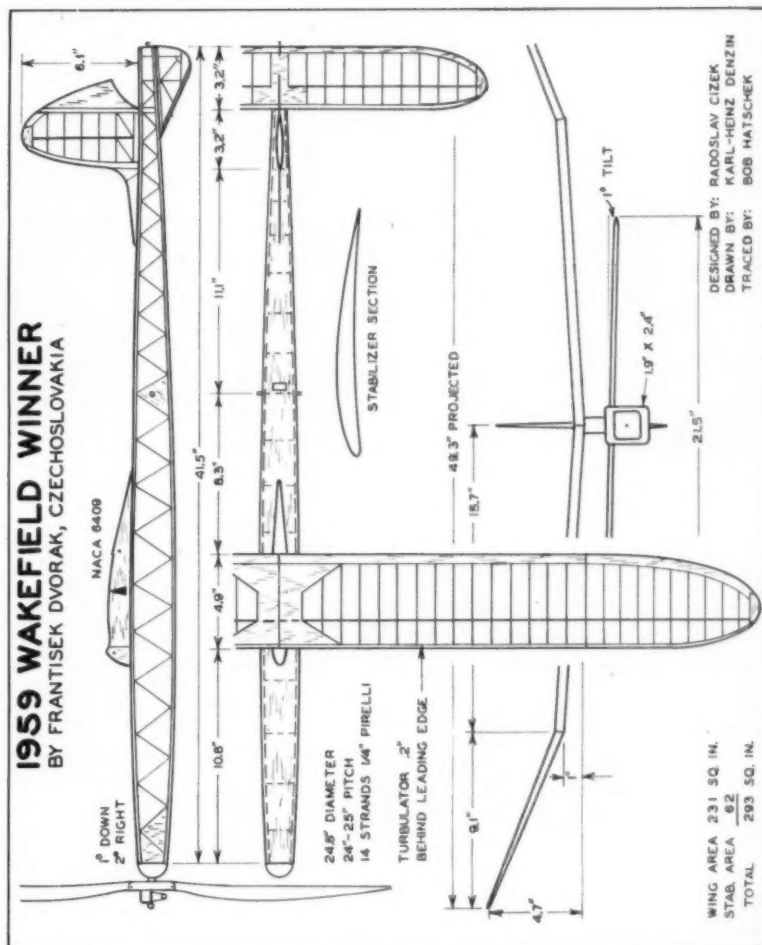


Ivannikov watches Bilgri winding. Note disc on shaft guarding prop any rubber-break damage.



Russia's Zapachny 5th in fly-off. Model used a nose fin! Hatschek, Russians exchanged models.

1959 WAKEFIELD WINNER BY FRANTISEK DVORAK, CZECHOSLOVAKIA



organizations of Czechoslovakia, Hungary and Russia.

This year's results were an almost complete reversal of the expected trend. Czechoslovakia, Hungary and Russia placed 14th, 10th and 8th in the team results. No less than the first seven places in the team results were filled by "Western" countries, Canada gaining a praiseworthy second and Great Britain third. Many of the favorites for the individual placings, too, finished well down the list of 61 contestants. Hungary's Benedek placed 28th, Sweden's Johansson (third last year), placed 32nd., while leading Russian and Czech experts Matveev and Cizek had to be content with 49th and 54th places.

This, the Wakefield contest that nearly didn't take place, was made possible largely by the efforts of the well-known French Wakefield enthusiast Marc Cheurlot and the co-operation of the U.S. Air Force at Brienne Air Base, Brienne le Chateau, Aube, France, where the event was held. That the organization fell short of the standards set in England at last year's Championships is, perhaps, in some measure, excusable under the circumstances.

Under recently revised FAI rules, each country was permitted to send a team of three and a team manager. Twenty-two countries actually competed. Since the U.S. team was not accompanied by a team manager, Karl-Heinz Denzin, editor of the German Magazine Modell and a good friend of many American service modelers in Germany, was elected to act as the U.S. team manager.

A few people thought this slightly irregular, but as a precedent had been set in '52 when the Swiss, Lanfranchi, managed the British power team (and, incidentally won the event proxy-flying Wheeler's model) the organizers accepted the arrangement.

The contest got under way, after considerable delay due to non-arrival of stopwatches, at 10 a.m. At the end of the first round, three countries had perfect scores: Canada, Great Britain and Italy, with the U.S. team close behind, 17 seconds short of a triple max.

In the second round, maximums came thickest with a total of 36 recorded, including three each to Finland, Hungary and Switzerland. No team had a perfect six-max score for the two rounds, Canada and Switzerland having five while Australia, Finland, Britain, Hungary, Italy, Poland, Sweden and the U.S. all had four. On an actual team score basis, however, the U.S. team were well ahead with a total of 1053 points followed by Britain with 1006, Finland (992), Canada (977) and Australia (971).

Joe Bilgri, Bob Hatschek and Herb Kothe all scored maximums in the third round. Only the Canadian and Polish teams had similar perfect scores in this round. Quite a few motor breakages were occurring as contestants tried to pile on those last few critical turns, that could make all the difference between hooking a thermal or getting stuck in a downdraft. Generally, fuselages, many of which were of balsa sheet construction,

(Continued on page 61)

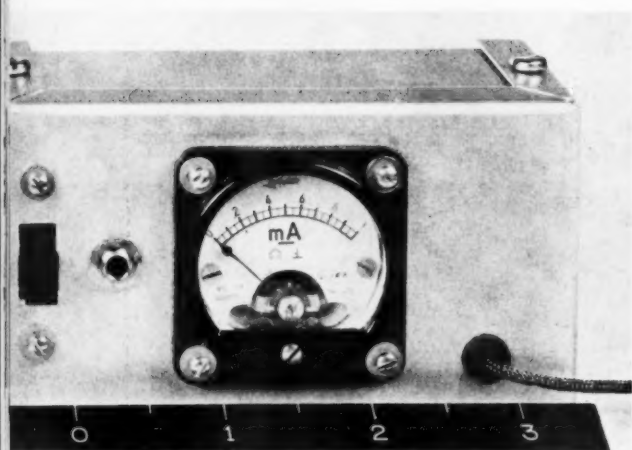


Figure 1. A suitable meter for tuning receiver is important. This one cheap, but reliable movement. Used with earphone connection.

A PROVED SUPERHET

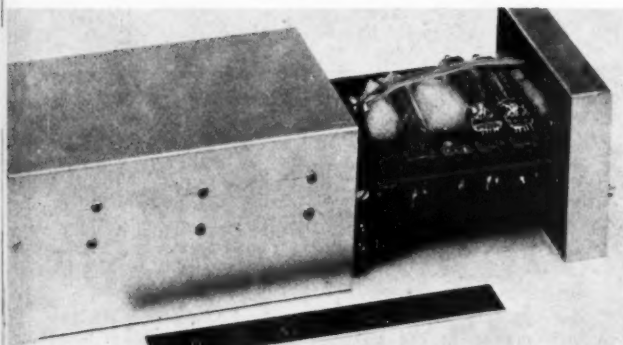
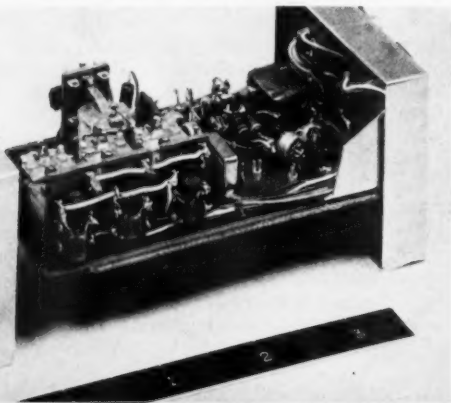


Figure 3. Vacuum tube WAG superhet using front end in October article. The experienced radio man will find modification not hard.

Figure 4. Another view of the superhet WAG. While the receiver appears big in the photograph, the ruler shows size is reasonable.



PART TWO

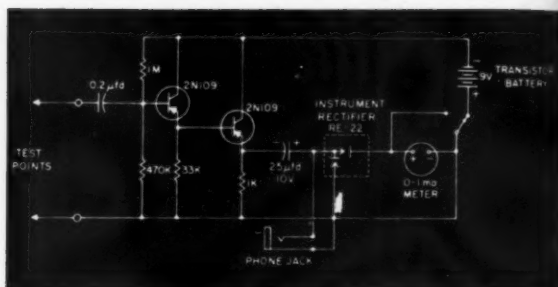


Figure 2. The schematic of the test meter pictured in Figure 1.

by DICK JANSSON

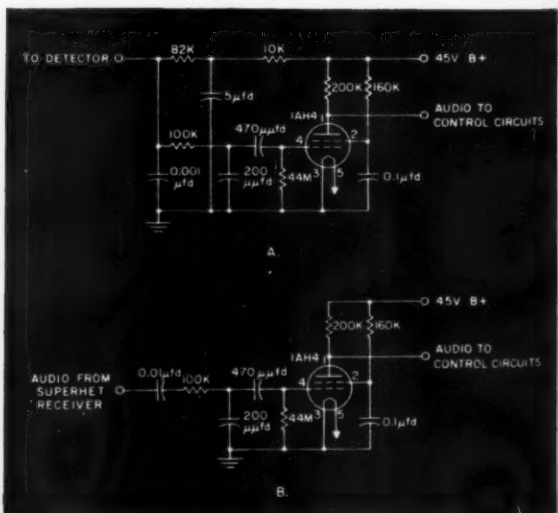
► In the first section of this two-part article the theory, use, and construction of the superhet receiver front end was discussed. Isolating the receiving function from the controls has its merits, in terms of flexibility, as will be shown here. Presented are four control systems that have all been thoroughly wrung out in operation with the receiver.

Before diving into the control subject, the matter of a good meter to assist in tuning the receiver should be covered. Figure 1 and schematic, Figure 2, describe such a piece of test gear that is inexpensive and reliable. The meter movement is a small but well-built import that costs only \$3.75.

While the meter indicates only relative AC voltages, having no specific calibration, it does have good sensitivity, full scale—0.72 volt RMS and zero scale reading—0.10 volt RMS. Other specifications of interest are as follows: input impedance—220 K ohms and a frequency response of 20 cps to 50,000 cps. A meter of this type with an earphone connection is convenient to use in listening in to various types of receivers to check their operation. Parts layout of the meter in the aluminum box is not critical; the meter shown has the transistors and associated components mounted on a piece of 1/16 in. thick phenolic board on one end of the box while the switch and battery are placed in the opposite end.

Since the intended application of the superhet was to

Figure 4A. WAG original circuit. Figure 4B. Superhet modification.



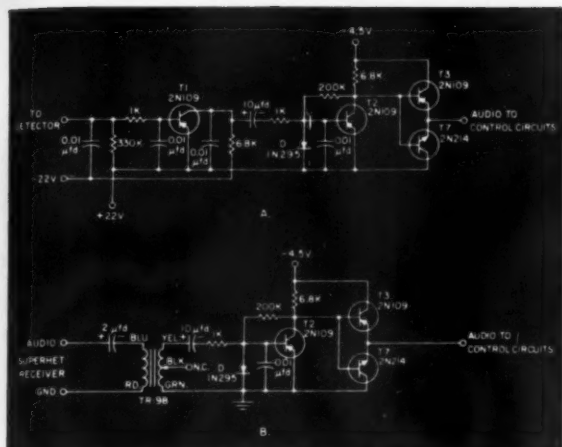


Figure 7A. Transistor WAG original. Figure 7B. And superhet mod.

the WAG TTPW (Too Tiresome to Piddle With) control, it was adapted to two versions of this system. Figures 3 and 4 illustrate a vacuum tube WAG. The amplifier portion of the original circuit is shown in Figure 5A and the adaptation to the superhet in Figure 5B. It was not tiresome at all to connect the superhet. Modifications of this simplicity will be found to be the rule in connecting present equipment to the new receiver.

The transistor version of the WAG was next tried with great success. Figure 6 shows the equipment that is presently being flown in a Custom Live Wire. Again a section of the original circuit is shown in Figure 7A. Figure 7B illustrates the modifications consisting of adding a \$.79 Lafayette transformer and eliminating one transistor stage. Very few modelers will be able to package this circuitry as shown; more conventional methods are to be encouraged. These electronics are, however, packaged using techniques developed, in part, by this author for missile use. Circuit components are not soldered but welded together on a three dimensional basis. In 3-D packaging the components are physically placed in a compact mass and encapsulated in epoxy potting compounds. Obviously, the electronics will be able to survive many pilot errors (crashes in other words) which are hoped to be few.

In spite of the apparent complexity, the superhet receiver is not limited to multi-channel. Operation of superhets is to be encouraged for all modelers, as the day is drawing

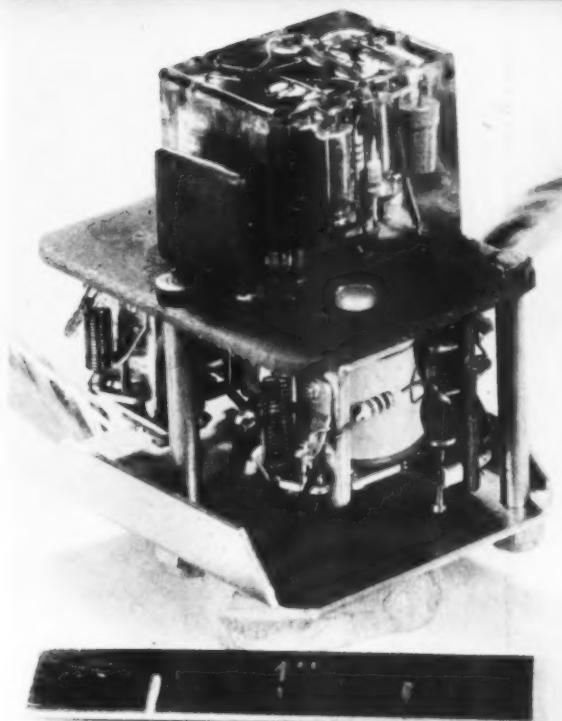


Figure 6. Author's encapsulated WAG transistor superhet as flown.

near that the Citizens Band communication channels will be seeing widespread use. For single-channel control the circuit in Figure 8 is presented. This circuit is commercial and known, with the only changes being the removal of the tube detector and the original TR-97 transformer and substituting the superhet and a TR-98 transformer.

For many R/C modelers the reed bank control is the utopia. This proportional control author even had to succumb to them to control model boats that operate in the faster speed ranges. An original circuit, Figure 9, was prepared for this use. The cost of the parts for this control system (less reed bank and relays) is less than \$10. An ED reed bank was used in the prototype as it was handy; other reeds will work equally well but they should be checked. If an existing reed receiver is to be adapted to the superhet, the coupling arrangements shown in the several schematics should be (Continued on page 40)

The proof of the pudding is in the eating. Presented now are four control systems that have been thoroughly wrung out with receiver.

Figure 8. Circuit for single-channel on Citizen's spots OK, too.

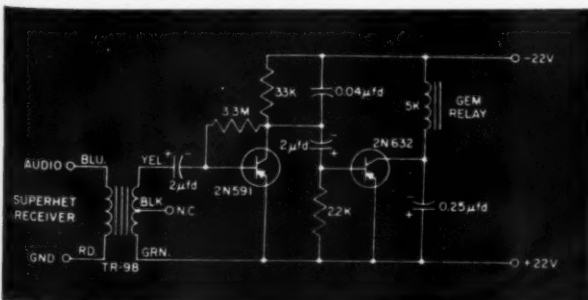
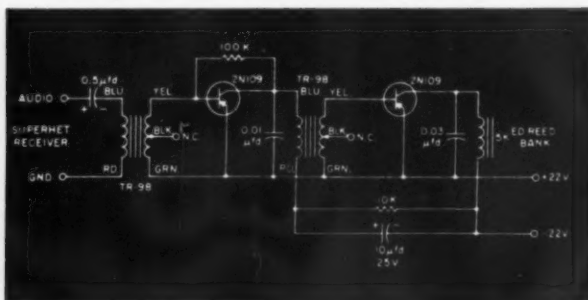


Figure 9. Author's original circuit for superhet mod, reed receiver.



Canada's Great Scale Contest



Air Marshal Hugh Campbell, Chief of Air Staff, RCAF, and Hugh Pearson, high point winner,

discuss latter's HS2L flying boat which took 600 hours to make. U.S. Navy, Smithsonian for info.

Commemorating 50 years of powered flight in Canada and 35th anniversary of the RCAF, the Air Forces contest attracted 9,000 registrants, and 900 actual models.



Of built-up construction, Pearson's HS2L reproduces every spar and rib, Liberty motor detail. Hull planking, interior, etc., to scale!



Boarding Comet jet, 14 prize winners off to Paris. Standing, right, is Lorne Williams, technical advisor, plans draftsman (MAN, too).

Planes that wrote Canadian air history were the required subjects. The winners came from eight of the ten provinces proving that real scale modeling has appeal.

► At 8 PM Saturday, July 7th, an RCAF Comet Jet roared down the runway at Ottawa's Uplands Airport—its destination Paris.

On board were 14 Canadian boys, prize winners in the Air Force's National Model Aircraft Contest held to commemorate 50 years of powered flight in Canada and the 35th anniversary of the Royal Canadian Air Force.

In Paris they would visit Canada's No. 1 Air Division in France and Germany with side trips to Belgium and Luxemburg. On a London weekend the boys had an opportunity to spend a day at the Armstrong Whitworth plant and take a familiarization flight in that firm's giant new ARGOSY.

The winners come from eight of Canada's ten provinces

and their models of historical aircraft eventually will find a permanent home in a National Aviation Museum.

Highest point winner in the contest was Toronto's 17-year-old Bruce Pearson, whose 36-inch span model of the U.S. Navy's HS2L Flying Boat (1916-17) is a masterpiece of modelling art. Pearson planned entering the University of Toronto's Engineering Faculty in the Fall.

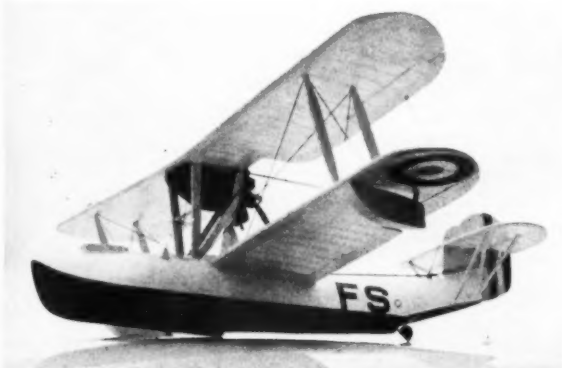
Pearson entered the contest early in December of 1958, spent three months on research before commencing the construction. He wrote the Smithsonian Institution and the U.S. Naval Bureau of Aeronautics both of whom provided additional information on the aircraft. He also contacted a number of old timers who had flown the HS2L when it was in service with the Ontario Provincial Air Service



Curtiss JN4 "Canuck" by John Koop. Williams' plan reference was Nieto Jenny in MAN. Winning models to National Aviation Museum.



What the Jenny was to the US, the famous Avro 504K was to both Canada and Great Britain as trainer during the first World War.



Bruce Anderson's Vickers Vedette. This was the first all Canadian designed, built aircraft. Was used for forestry patrol, surveys.



DH Cirrus (engined) Moth trainer internationally famous interim years, this model by Ray Perkins. All models hand built—no kits.



Armstrong Whitworth Atlas used extensively by RCAF in early thirties, here interpreted by Kenneth Vail. Note the two-row engine.



Fairchild 71, Louis Gaudette. The "71" was an airline—air mail pioneer in the United States, did much "bush flying" in Canada.

Other major prize winners were John Veal of Toronto who ran Pearson a close second with his model of the HS2L; Robert Armstrong of Vancouver and Clarke Seaborn of Calgary in the Siskin fighter class; David Kuntz of Moose Jaw and Norm Snihur of Winnipeg with Avro 504K; John Koop of Chatham, Ont. and Michael Williams of Picton, Ont. with the JN4 Canuck; Bruce Anderson and Pierre Abbeloos of Montreal, P.Q. in the Vickers Vedette class; Raymond Jenkins of Barrie Comeau, P.Q. and Louie Gaudette of Three Rivers, P.Q., who submitted the DH60

Cirrus Moth and Fairchild 71 respectively. Winners from the Maritime Provinces where the Armstrong Whitworth Atlas was the competition aircraft, were Barry Soontiens of Amherst, N.S. and Kenneth Vail of Sussex, N.B.

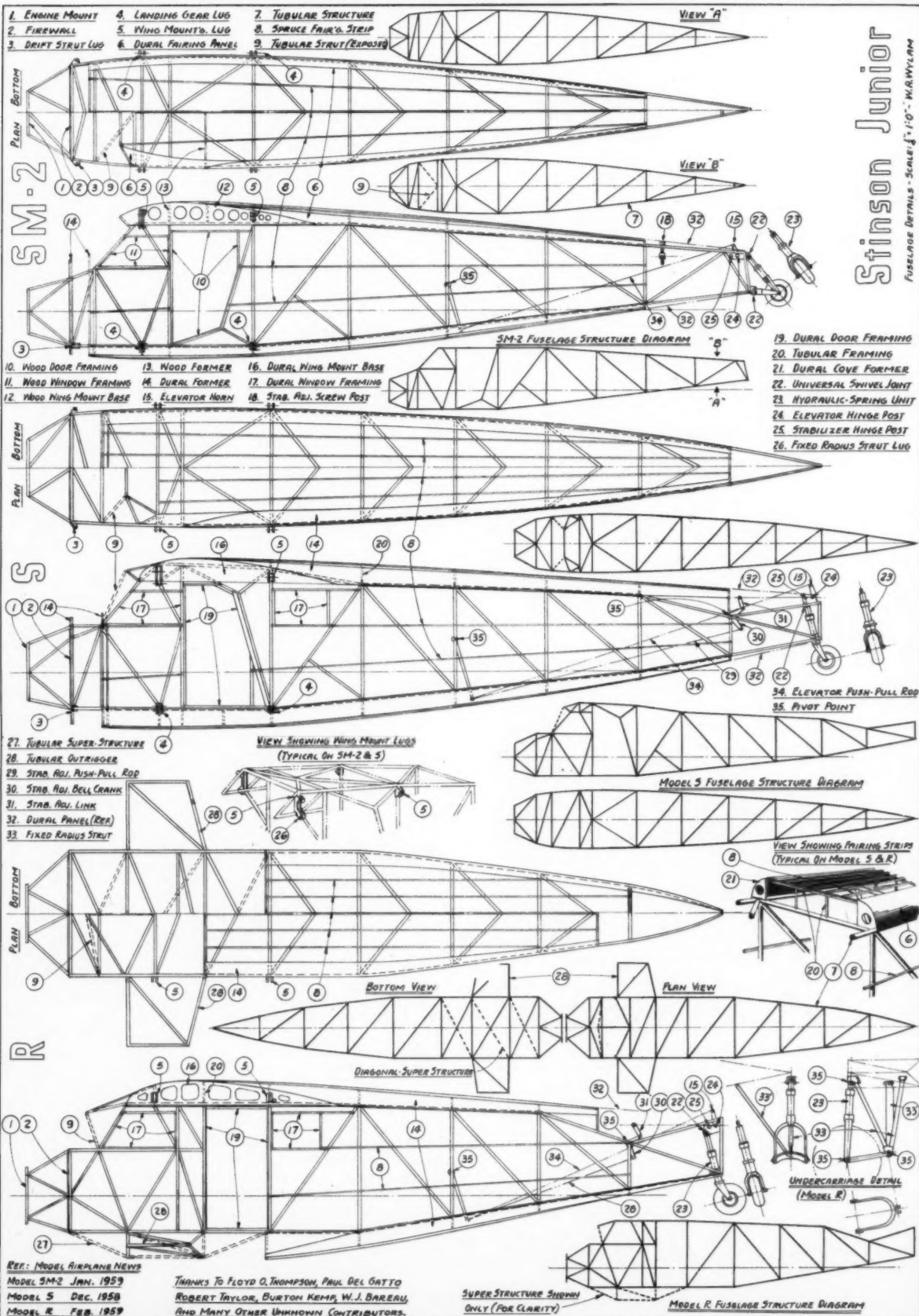
The 28 second and third prize winners were given an opportunity to visit anyone of Canada's three major exhibitions; the Calgary Stampede, Pacific National Exhibition Vancouver, Canadian National Exhibition at Toronto.

Although close to 9,000 boys were registered in the Contest and had received plans of (Continued on page 44)

STINSON JUNIOR by William Wylam. Construction details for Models SM-2, S, and R.

Stinson Junior

FUSELAGE DETAILS - SCALE 1/10" = 1" W.W. WYLAM



REF: MODEL AIRPLANE NEWS
 MODEL SM-2 JAN. 1959
 MODEL S DEC. 1958
 MODEL R FEB. 1959

THANKS TO FLOYD O. THOMPSON, PAUL DEL GATTO,
 ROBERT TAYLOR, BURTON KEMP, W. J. BAREAU,
 AND MANY OTHER UNKNOWN CONTRIBUTORS.

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PACKET = 13 WW1 — FIGHTERS

A or B — Spad 26½", Fokker D7 30", Nieuport 27", Sopwith Camel 28", Fokker D8 27".

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Gee Bee 25", Peco 25", Fokker 20", Ike 30", Wendell Williams 26".

PACKET = 4PP — WW1 FIGHTERS 1/4" SCALE

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PACKET = 3 FIGHTERS — 1/4" SCALE

Black Widow P-6 1 16½", Dauntless 10½", Hawk Tempest 10", Kingcobra P 63¼", Hawke Hurricane 10", Messerschmitt 109 8¼", Bell Aircomet 12".

PACKET = 1 FIGHTERS — 1/4" SCALE

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the Skycoupe climbs better than 1000 feet per minute. Should make an excellent flying model.

Home Built Parade STITTS SKYCOUPE

Latest addition to the Stits stable is this two-place cabin job with snappy performance.

For Ray Stits, whose home built projects run mainly to low and midwings, the Skycoupe side-by-side cabin is a departure. On engines of 65 to 100 horses, it has top of 140 mph (with Continental C-85), cruising at 120 mph, and stalling out at 48 mph. It is licensed as an Amateur Built Airplane.

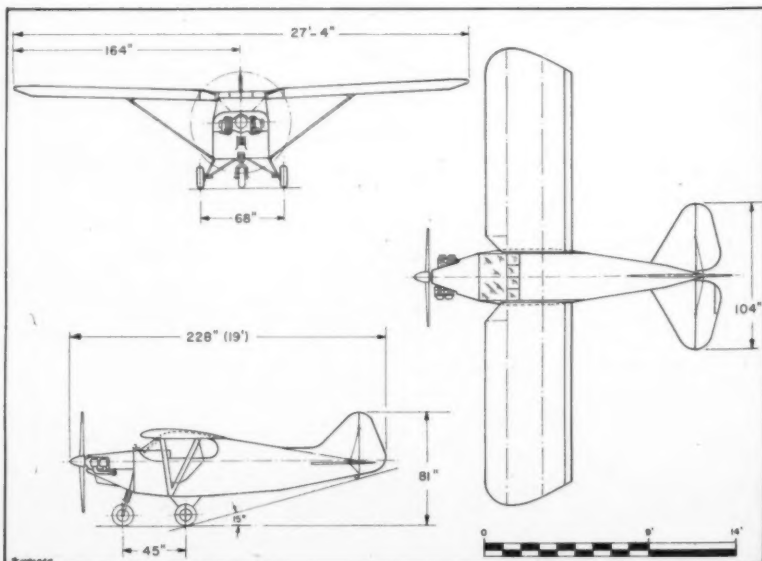
The Skycoupe, like most home builds, is small and functional, although its appearance certainly does not suffer. The wing span is 27 feet 4 inches, length 19 feet, and height 6 feet 9 inches. Gross weight is 1300 pounds, empty 750 pounds (estimated with C-85-12, starter, generator, battery, radio, metal prop, sound

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(Home-builders can address Ray at Riverside, Calif.)



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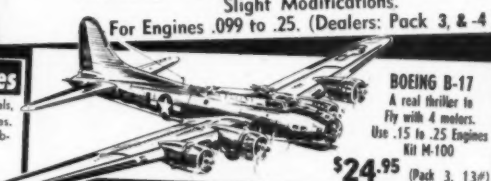
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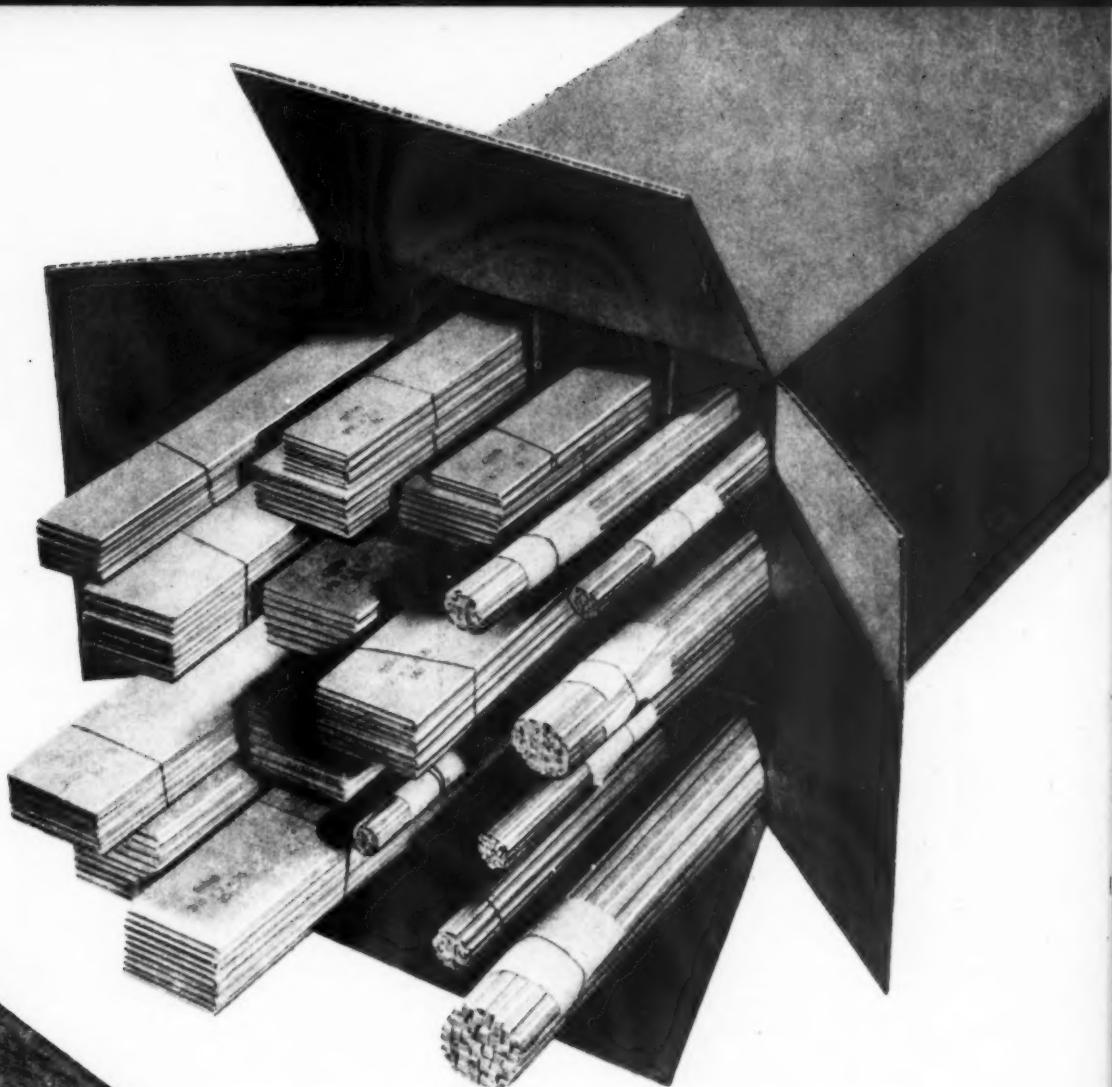
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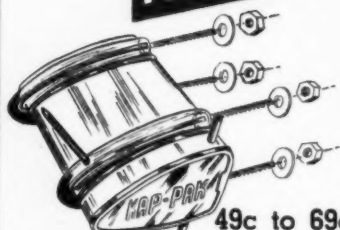
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BROADFIELD AIR-MODELS
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Radio Control News

(Continued from page 17)

Orbit Single and Cobb escapements and servo . . . Congratulations to the Peoria RC Tattler for obtaining a typewriter for their newsletters. Bob Draper and Vern Springer of the club fly 5-channel superhet and multi-channel superregen planes at the same time. Dick Etter has an .020 job with the CG Pioneer relayless receiver which performs well and he is now looking for an .020 size engine control. . . . The Central Jersey RC Club boasts nine 'ham' operators in their club. Jan Mock and Nick Ciampa are doing work on center-loaded whip antennas which they claim will boost the output about 15 times when using a 3 1/2 foot center-loaded job over a conventional 3-foot one. . . . The North Jersey RC Club has John Clare flying Breezy Jr. with a TR 4.5 receiver and Tom Knakal and E. Reuther using the Kraft receiver for pulse work.

Bill Kenyon reports on the Syracuse, N.Y. area Hobo meet over July 4th holiday. Hal deBolt took 1st in Multi, Ralph Jackson 1st in Intermediate, and Bob Throne 1st in Rudder only. Ed Keck beat out deBolt 1.56 to 1.57 in Pylon. Intermediate flying was not deemed up to standard and rudder only entrants were very few. Bill was the flying judge and gave high points only when the flier did what he said he was going to do. . . . At the 3rd Annual DCRS Contest, Fred Warnock took 1st in Rudder Only, 83% pts.; H. McEntee 1st in Intermediate with 87 pts.; and Maynard Hill 1st in Multi with 233 1/2 pts. Vince Bonnama won the Sad Note trophy for his splintering full power vertical dive from 200 feet onto the tarmac. . . . From a statement that "Rudder-only fliers have nothing to fear from the Intermediate boys," the Rudder-only and Intermediate flying was combined at the Greater Washington Model Air Show on June 19th, rather than Intermediate and Multi. No results to date. . . . Dick Kamka, 12322 Roseton Avenue, Norwalk, Calif. announces the formation of the Southern California Radio Controllers, located in the Norwalk-Whittier area. Strictly a model airplane club, it welcomes FF and C/L fliers.

Donald Sump, the "father" of RC flying

in Sheridan, Wyo. reports the Memorial Day session vastly improved this year. Ed Pagel of Great Falls did an excellent job of flying with his 6-channel, Marcy Toned Live Wire Cub with a K&B 15 and a 30-40 mph wind. Maybe those steak dinners in the past paid off. Don. Radio equipment was conceded to be highly reliable.

TECHNICAL TOPICS

With the Kraft receiver accepted around the country as an easy to build and reliable unit, we would like to point out once (Continued on page 36)

AVAILABLE NOW

A complete Dual-Simultaneous
Proportional Control System with
Selective Positionable Motor Control
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The Fabulous New
Crescent Dual Pulsar (shown)

- Failure proof mechanical design.
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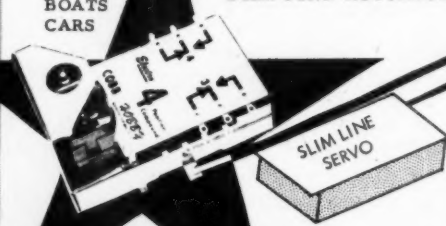
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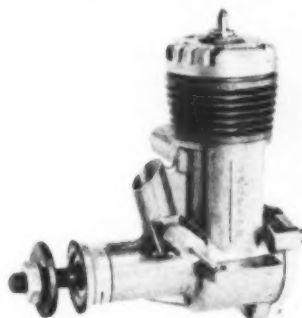
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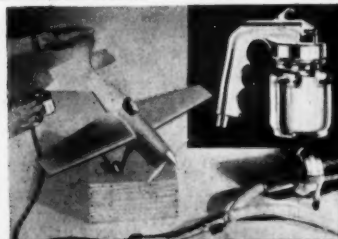
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more that the 5mf electrolytic capacitor across the output transistor must be reduced to 1mf if you want to use the receiver for pulse work. This is borne out by Mr. Clifford Leach, Jr., Navy 830, Box 12, FPO San Francisco, Calif. who had to make this change. He built the receiver in Japan, using Japanese transistors and operation is perfect, using a Japanese mechanical pulser. His next project is making the necessary changes to add a reed bank.

Back in July, Ed Yulke made a duration attempt with an aim of about 10 hours. In over two years of testing, no radio-trouble was experienced. Yes, you guessed it, it had to happen on the big day. With the plane headed for the Azores, Ed thought that was the end. A week later it was returned by a fishing boat from 20 miles at sea, one wing riding the waves like a sail. Examination showed the radio trouble to be a fatigued and broken screen dropping resistor. Who knows how many other fly-aways and crashes can be laid to such happenings. The easiest thing for an RC modeler to do is coat and cement the components to the chassis with polyester resin, or fibreglassing resin. We've used this and other material for years and the receivers have withstood the hardest handling.

Another item to be aware of is tarnishing of silver relay contacts. Silver oxide is conductive and does not often present a problem. However, silver sulphide is not and should be guarded against. The easiest way to generate a formation of silver sulphide is in the presence of sulphur-bearing materials used for construction work. Pliobond and various contact cements will cause this. On the other hand, we have had no trouble when using a little preventive maintenance. Use the GEM relay burnisher or even a piece of newspaper run between the points occasionally.

With winter flying approaching, it becomes more important to maintain battery capacities. As stated before in this column, the carbon-zinc cell drops off rapidly from about 35 degrees F and below. Ni-cads are good for 60 below. We checked a B & S transmitter converter on a set of surplus Ni-cad cells (6 volts) at the following temperatures: 78F—145v with 20ma load; 30F—148v with 20ma load and at 0°F—153v at 20ma load. There is no reason the receiver converters will not perform as well. Thus, the use of Ni-cad cells and transistorized converters should solve many of the winter power problems. With many of the all transistorized receivers designed for 0 to 30 below operation it is also advisable to power them with ni-cads. Three volt operation is no problem and for receivers using 4 1/2 to 9 volts, the small CC cells (100 to 250ma size) will do the job.

NEWS ITEMS

Ace Radio Control is offering the Flight-master Superhet, model CC-SR-63 for \$59.95. Measuring 3 x 2 1/2 x 1 3/16, it weighs 3 3/4 ounces, operates from 4 1/2 volts and idles at 4.5ma with a rise to 35ma upon receipt of a 150 to 4000cps tone signal. The IF is 455kc down from the transmitter carrier frequency.

Lafayette Radio, 165-08 Liberty Avenue, Jamaica 33, N.Y. has announced the release of their new 1960 general catalog containing over 300 pages. Free upon request, this catalog contains many miniaturized components, tools, technical books and hard to find components.

(Continued on page 38)

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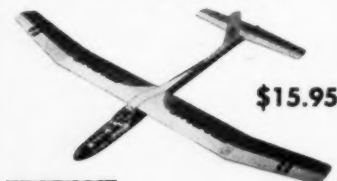
Flying The Wizard with multi-channel radio equipment is almost like sitting in the cockpit yourself! Engine speed control plus Aileron, Rudder and Elevator controls give you full range maneuverability from the ground! Steerable tail wheel and brake give you spot landings. Breakaway wings prevent serious damage in hard landings. Performs acrobatics with ease. A beautiful performer with simple channel radio equipment, and just perfect for sport-free-flight or control-line flying. Easy to build . . . parts are die-cut and/or shaped and intermatched for accuracy. Large super-detailed plans.

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Minitone, Inc., 55 W. 13th St., NYC is now offering their Torque Converter and Speed Control units. Using the familiar Minitone low drain motor, the output shaft can have a speed reduction of 27:1, 81:1, 243:1, 486:1, 729:1 and 2187:1 and the entire unit is capable of more than 1,000 hours of operation. Battery packs can be supplied right on the motor and gear assembly, and motor voltages range from ½ to 20v DC.

Foreign Notes

(Continued from page 2)

Werner Langfield, 411 secs. Scale: Helmut Ziegelmeier, 122.7 points. RC Multi: Karl-Heinz Stegmaier, 2152 points. RC Intermediate: Rolf Schmidt, 730 points. RC Rudder-only: Werner Kaseberg, 1211 points. RC Glider: Wolfgang Piegsa, 635 points.

Nordic A2 winner Oberdorf flew a four-year old model, which is nearly 3 oz. overweight but which still does around 2:50 in still air off the regulation 164 ft. line. Oberdorf lost a leg during the Second World War and wears an artificial limb. Despite this handicap, he does all towing himself. As noted above, contestants in the Nordic A2 and other World Championship classes were, on this occasion, required to make 10 flights, instead of the usual five. Mention of physical handicaps, incidentally, prompts us to applaud, also, the effort of Hans Boettner, 4th in RC glider, who lost both forearms in World War II.

RC maestro Stegmaier, once again, topped RC multi, but quite close was Werner Paschke of Berlin. Paschke flew a 7½-lb., 66 in. ship, powered by a Webra Boxer twin-cylinder motor driving a Top-Flite 13

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x 5½ prop. He used home-built 6-channel radio operating rudder, elevator and throttle. In the RC events, only a few commercial designs were seen, but a Berkeley Bootstraps topped the single channel, while a Royal Rudderbug took 3rd in multi. Nearly everyone used tone modulated equipment and transistorized receivers. Great Britain

The only really effective challenge so far offered by Britain to Continental modelers in the FAI World Championship Speed class, has been in the combined efforts of engine specialist Fred Carter and speed flier Ray (Gadget) Gibbs. About a year ago, however, a group of modelers got together and decided it was high time a more concerted effort was made to create a bit more opposition (this time on full team basis) for the wizards of Czechoslovakia, Hungary and Italy. The team includes Pete Wright, Norman Butcher and John Hall; Fred Carter once again being called in to provide the engines.

After sundry experiments on airframe layouts using stock engines, a very promising delta wing ship of alloy and fiberglass construction has been evolved and this has now been tried with the first of the special .15 motos to leave Carter's workshop. Some experiment with fuel feed and fuels has yet to be carried out, but, on its first day out, recently, the new ship clocked 128 mph, which is only 4 mph below the winning Hungarian speed last year.

Italy

New motor announced in Italy is the Bontor, a .45 cu.in. alternate firing, inline twin diesel. The motor (and its name) is the result of co-operation between Giuseppe Tortora of Rome and the engineering firm, Bonora. The engine is intended, of course, for multi-channel RC.

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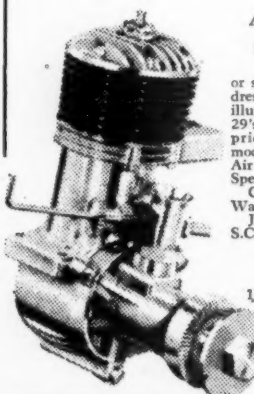
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A Proved Superhet

(Continued from page 25)

adequate to illustrate the methods to be employed.

One final note on the installed equipment is in reference to radio noise generated by actuator motors. Five to ten micro henry chokes should be placed in series with the motor leads and the brushes bypassed to the motor frame with a pair of 0.01 μ fd ceramic capacitors. This method should eliminate any trouble. It will be found easier to prevent noise trouble in this receiver, with its 4.5 Mc. I.F., than in the superhets with $\frac{1}{2}$ Mc. I.F. amplifiers.

By this time it should be fairly clear to the experienced reader that the subject of coupling the superhet receiver into conventional control systems (present tone receivers, etc.) is quite easy. It turned out to be far more elementary than this author had originally imagined—to the point that any present tone receiver can be adapted to the 27 Mc. Superhetrodyne receiver with very little trouble.

Wheels To Floats

(Continued from page 21)

frustrating dunking getting these bugs worked out, but in the end were well rewarded.

Regarding float size and construction, of prime consideration is the fact that floats should be built to last. One set can be used on any number of ships and will in all probability outlast quite a few airplanes, especially if they are removed in favor of wheels. On ships weighing from three to five pounds, 3/32 medium balsa is acceptable; on multi ships weighing up to nine pounds, $\frac{1}{8}$ hard should be used exclusively. Bottoms covered with fibreglass help to prevent nicks and gouges. Connecting bars between pontoons should be $\frac{1}{2}$ inch hard maple, firmly cemented to $\frac{1}{2}$ inch plywood bulkheads. Pontoons must be rigidly mounted to the fuselage. On the three- to five-pound class, $\frac{1}{2}$ piano wire is sufficient; from five to nine pounds 3/16 is better. The rear wire should be firmly anchored with two aluminum straps bolted to a piece of hardwood firmly cemented to the inside of the fuselage. The forward section can be secured with rubber bands to the original landing gear dowel. Split fuel line wrapped with Perma-Cell prevents scuffing in this area.

It is the consensus of opinion that elevators are necessary for successful take-offs and landings, but it is our experience that this is not true though they can overcome a bad trim angle. If everything is right or near so, rudder is sufficient. However, three-speed engine control is an important asset especially if there is no boat available. Last season we installed full-house control on a float-equipped Monocoupe. The plane flew realistically and un-elevator made for very snappy take-offs and flared-out landings. Though the ship had plenty of snap on wheels, the additional drag of the pontoons slowed it down to a crawl. If your plane fails to take off because of a tired or too small engine, look to a hotter fuel. If this fails, you may have to up the displacement a notch.

Water rudders are helpful, but not necessary in taxiing maneuvers, unless it is a little breezy. With a high-, medium-, and low-speed engine the ship can be taxied in medium speed, making the air rudder quite effective.

In conclusion, if you have a nice plane that you would like to keep for a while, take a few evenings off and build a pair of floats. Float flying is one sport that the whole family can enjoy.

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To assist the advanced builder in making his unit, a complete parts package is being made available along with instructions.

All required components have been assembled and the total price is less than if the parts were purchased individually. The package includes three special transformers, a special Gem relay, four transistors, including a specially selected and tested A01 to insure operation at 27 $\frac{1}{2}$ mc/cycles.

All coils are completely wound. A special ferrite core RFC is used to insure small size. Allen Bradley resistors and Goodall capacitors are used throughout.

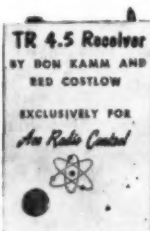
A special light weight aluminum case is also supplied to make a compact unit measuring 2x2 $\frac{1}{2}$ x $\frac{1}{2}$ in. Weight is slightly over two ounces.

The unit requires only 4 $\frac{1}{2}$ volts of battery and idles at 2 mils, which upon receipt of modulated signal of 400 cycles at 100% rises 35 to 40 mils for reliable operation.

Temperature checked from 130 down to 20 degrees and operation is reliable throughout this range. The TR 4.5 is not recommended for the beginner or the R/C fan with limited radio experience.

It is available only from Ace Radio by special arrangements with the designers, Don Kamm and Red Costlow. Another Ace exclusive designer approved kit. Complete parts package, nothing else to buy except batteries, only

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For several years Ace has worked with top R/C designers to produce exclusive designer approved control kits, in which the designers themselves have selected and approved components used. Here are some ACE R/C exclusives:

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Flash! New Kraft tone receiver parts! Due to popular demand, Ace has made available parts for this unit. They may be had separately or in a combo parts package.

PC Base reworked to hold the CR60 transformer, undrilled	\$.75	CK722	\$.99
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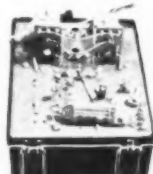
Marcy Twin Simul System

At last, a single fool-proof dual channel simultaneous receiver and transmitter, designed by Marcy Inkmann, developer of the MarcyTone single and six channel receivers.

Now you can use either channel for push button or pulse flying since each channel may be pulsed simultaneously up to 20 cycles per second.

Marcy's Twin Simul receiver kit contains 6007 tube, three T0037's, two Gem 5K relays, two filters and all other required components. Weight is under five ounces. Unit measures 2 $\frac{1}{2}$ x 3 $\frac{1}{2}$ x 1 $\frac{1}{2}$ inches deep. Only

\$27.95



Marcy Twin Simul transmitter — Dual-tone generators housed in a 3 x 5 $\frac{1}{2}$ x 8 case use an MOPA-type RF section with a 3A5 two-tube amplifier. May be operated with push buttons or with dual pulser below for twin simul proportional control. Complete unit including transmitter and twin simul tone generators. **\$37.95**

Marcy Twin Simul Tone Generators — Housed in aluminum case 2 x 4 x 4 for converting existing Marcy Tone equipment to dual operation. **\$17.95**

Marcy Twin Pulsers — Stick control housed in small metal case plugs into twin simul tone generators for dual proportional flying. Motor control may be added, using either full on or full off. **\$32.95**

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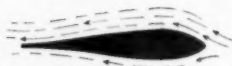
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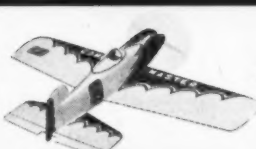
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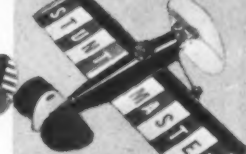
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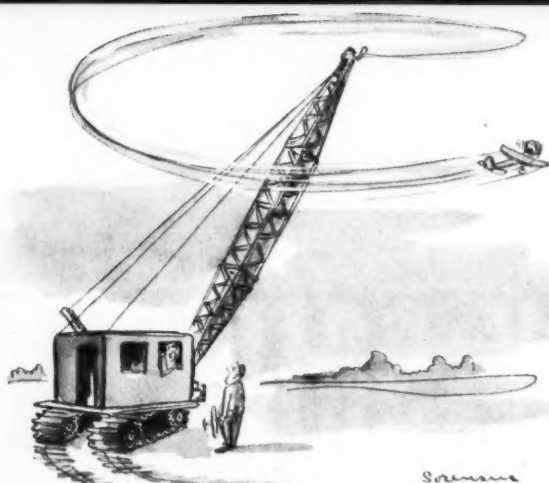
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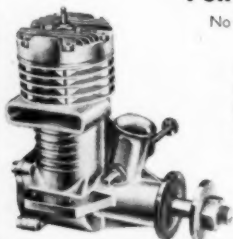
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Canada's Great Scale Contest

(Continued from page 27)

the eight aircraft, less than ten percent actually submitted models for judging. Local judging of approximately 600 models was carried out at St. John's, Nfld.; Sydney, N.S.; Saint John, N.B.; Montreal, P.Q.; Ottawa, Ont.; Toronto, Ont.; Kingston, Ont.; Windsor, Ont.; Fort William, Ont.; Winnipeg, Man.; Saskatoon, Sask.; Calgary, Alta., and Vancouver, B.C. One hundred and fifty semi-finalist's models were transported to Ottawa where a National Judging Committee under Mr. J. H. Parkins, former director of Aeronautical Research at the National Research Council, Mr. Lorne Williams of the Department of Technical surveys and draftsman of the basic plans, and Mr. W. Williams of the Model Aeronautical Association of Canada took three days to decide on the 42 winners.

All models were fully constructed by hand; no kit components or other parts being used.

1959 Nationals

(Continued from page 11)

and stunt reveal future stars!

► The Indoor events at any Nationals never has a huge entry list, but it is a traditional part of the big meet that involves some 70 to 100 people. Most, this year, were the ones who regularly knock the ceiling out of the Santa Ana Dirigible hangar, ten miles from NAS, near Long Beach.

Wild rumor had it that the ceiling in the Pan Pacific Auditorium was only 40 feet. Not available for the Nats. Santa Ana reaches 187 feet to the top. Finding the Auditorium ceiling a stratospheric 70 feet, nine of the toss glider boys managed to beat a minute, Jack Block (Open), the king with 1:09.2. Lewis Gitlow's 21:43.7 in "mike" stick wasn't bad at all, for a 70 foot ceiling. At Santa Ana, times might have reached 30:00. An interesting comparison can be made between "mike" cabin, Charles Sotich, Open, 17:54.4, and Paper Stick, Loran Salisbury—Open, 16:05. Loran also topped Unlimited Rubber, Outdoor (21:11) for a very nice bonus—the venerable Mulvihill Trophy going back to 1926, now tossed in for highest time in rubber. (Hear Hatschek—who went off to France to win second in Wakefield—called MAN in New York to find out who got

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"his" Mulvihill. Bob prized the famed trophy the last two years that he won it!)
 ► And speaking of guys going off places, that champ of champs, Woody Blanchard, concentrated on FAI power eliminations, got 10 booming maxes, then they cancelled the world finals for the year! Ouch! The Europeans probably never would have gotten over exposure to Blanchard, but poor ole Woody just gets this here plug. AND DID YOU HEAR, JERRY RITZ WON WORLD FINALS IN NORDIC IN FLY-OFF!

► On Half A Free Flight day, the fall-out was terrific! Most of the little ships went up, yet it seemed to rain balsa and tissue and these over-powered swifties created a shrieking maelstrom of noisy gnats, launched in flurries, and inhaled by the thermals that carried them away by the two-dozens. They became only flecks in the haze and clouds that drifted like puffs of milkweed toward the Sierra Nevada range. Top times in free flight ran from 15 to 20 minutes. On A day things did cook. Junior Allan Ross, had a fine 27:58.8; John Pond, Open, 27:8.8; and Don Mello, 26:12 in Senior. Like the days of yore!

► How much more vicious can combat become? Combat ships seem much smaller and the engines hotter, if that's possible. The reflexes and talents of the combat pilots seem almost unbelievable. Last year, I referred to the combat models as sanded shingles with a hinge in the middle. This year, they seemed more like a darting punkin-seed with a hinge in the middle... that were not sanded.

MAN's famed Texan contributor, whataman Riley Wooten, showed 'em, wowed 'em again! Your editor cried in his daze when Wooten reported a prang of the Guided Missile (in the last issue) before the event, but Riley won, using the What-izit (MAN, July '58) and a high-tailed variation of the same catamount.

► It was fairly apparent by mid week of the big meet that, barring bad luck, a broken leg, or a poisoned orange from the local groves that Bob Hunter would be the Grand National Champion. At least the magazine and news people seemed to feel that he had the championship in the sack... and the press releases were almost out of the typewriters. Not so with Hunter as he flew his finely tuned ships with the intensity of a hungry tiger right up to the three o'clock gun on Sunday afternoon. When that gun sounded the big affair was all over... and a great portion of it belonged to Bob Hunter and a fine eleven-year-old boy who did build all of his own airplanes... and came within a few points of grabbing the Grand Champion honor away from his dad.

Bob Hunter and his eleven year old son Billy were the kings of the nearly one hundred father and son teams who competed separately for honors. Billy Hunter romped through seven events to Junior Championship totaling 561 points. Billy's models were not beautiful and well built like those flown by his 32 year old dad. In fact, a few of Bob's championship models were not beautiful either. They were contest scarred and fuel soaked from a hard string of contests from Bakersfield to San Diego during the spring.

► Radio events more popular every year. Multi-channel and the pylon race entries drew more than their share of crowds. You could see the free flight fliers heading for the RC area to watch spectacular performances after they had completed their own less-awing flights for the day.

Bob Dunham, who just never has anything go wrong, according to the guys who can't beat him, topped multi RC yet again, thereby assuring his place on the interna-

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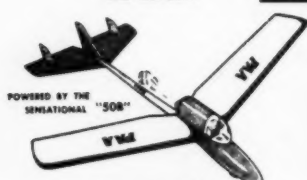
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POWER JETEX "50B"

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Air Force transport
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Black Widow!
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Famed Superfortress
- BOEING C-97
Military transport
- MARTIN B-26
Medium bomber

Set =
W-6

tional team that will go against Stegmeier and company next year in Europe. But Ed Kazmirski, the great wanderer from Calumet City who thrives on contests, pushed Bob plenty with 503 points to 519. And will wonders ever cease; Ken Willard, flying a scaled up Gasser (MAN June '59), proved finally that intermediate can-so-whole the tar out of rudder only. His 256 points look pleasing. Prediction—you ain't seen nothing yet! Five Californians landed in that order in Open Rudder only, Charles Haynes at the top with 191 points, three of them flying Milt Boone's (2nd place) design.

One of the busiest people at the meet was Dr. Walt Good, our A.M.A. President. Besides flying RC as always, Walt got to talk to practically everyone at the Nationals. He covered every event on every runway . . . asking opinions from the new fliers and old timers alike—greatest pres. ever.

► Impressed by: W. S. Deans, hot shot multi flier, with 41.36 in RC pylon. Flew special Jerry Nelson design with five-channels. Whatever happened to dual pro? . . . Walt Mooney's win in scale . . . Warren Kurth, 16.23 to top Nordic Open, for he also had a first in speed. Versatile! . . . Ed Shippe, Open Rocket Powered (they mean Jetex—and don't confuse this with Pan Am jet), with 12 minutes flat. Not bad for hissing power . . . Parnell Schoenky, tops again in helicopter at 88.5. P is Mr. Helicopter but the event is very poorly supported. Sad! . . . and that gal who usually wallops the men in a real man's event, Virginia Randall, with 437.51 points in Navy Carrier. She won Open. Ever try Carrier? Only Garry Korpi, Senior, did better—462.67 points . . . See Morton and Grogan team at 117.14 mph in proto. Proto jobs make beautiful looking airplanes if your taste runs to ukie! . . . Team racing, Eugene Leedy, T. R. doesn't look like much between races but a whirlwind when they get off. Like a swarm of berserk hornets . . . How can you rack up big times without a motor or a towline? Hand launched gliders. Better than 10 minutes, by both John Diebolt, Senior, and James Scarborough, Open.

► Engine manufacturers on hand: Duke Fox, John Brodbeck, Gil Henry, Hi Johnson and Bob Holland. All their engines were plenty adequate for the heavier models under the new rules.

► Wheels within wheels. PAA Load events a small Nats in themselves. Jet PAA Load, Junior Jet, Clipper Cargo (both .02 and .049), PAA Load Gas. The Cargo boys are at it again—Bill Langley lifted 39.25 ounces on the wee .02! Dan O'Malley a nifty 14:37 in Jet PAA Load Jr.

► After completing his flying in the early morning, Hunter would join me with pencil and pad to take picture captions on the three-wheeled motor scooter that served as the MAN go-cart. If the captions for this issue of Model Airplane News are mixed and all wrong, blame it on Bob Hunter!

► On August 11, the beginning of an exchange of telegrams:

To Studio Graphic:
Pictures arrived. Where is the story?
Editor

To Editor:
Paul slipped on crutches. Is back in hospital. Broken left arm.
Joe Ryan—Studio Graphic

To Joe Ryan—Studio Graphic:
He is right handed. Take him a bundle of pencils and a yellow pad. He is our boy.
Editor

SIG Balsa Wood and Model Products

AIRCRAFT BALSA

STRIPS	36" Lengths	SHEETS	36" Lengths	PLANKS	36" Lengths
1/16x1/16	1e	1/32x2	19e	1" x1	40e
1/16x1/8	4/5e	1/16x2	12e	1/2" x1	25e
1/16x3/16	3/5e	3/32x2	14e	3/4" x1	54e
1/16x1/4	2/5e	1/8" x2	17e	1" x2	72e
1/16x3/8	3e	3/16x2	21e	1-1/2" x2	97e
1/16x1/2	4e	1/4" x2	28e	2" x2	125e
1/16x3/4	5e	3/8" x2	32e	1/2" x3	88e
1/16x1	7e	1/2" x2	38e	1" x3	96e
3/32x3/32	4/5e	1/16x3	18e	1" x3	115e
3/32x1/2	2/5e	3/32x3	21e	1-1/2" x3	145e
3/32x3/4	3e	1/8" x3	28e	2" x3	175e
3/32x1	4e	3/16x3	31e	3" x3	285e
3/32x1/2	5e	1/4" x3	38e	1/2" x4	88e
3/32x3/4	7e	3/8" x3	38e	1" x4	148e
3/32x1	9e	1/2" x3	45e	1-1/2" x4	193e
1/8" x1/8	3/5e	1/16x4	28e	2" x4	238e
1/8" x1/4	3e	1/8" x4	35e	3" x4	342e
1/8" x3/8	5e	1/4" x4	42e	1/2" x6	137e
1/8" x1/2	7e	3/8" x4	42e	3/4" x6	180e
1/8" x3/4	9e	1/2" x4	49e	1" x6	220e
1/8" x1	11e	3/4" x4	49e	1-1/2" x6	282e
3/16x1/16	4e	1/32x5	55e	2" x6	344e
3/16x1/8	4e	1/16x5	55e	3" x6	512e
3/16x3/16	6e	1/8" x5	65e	1/2" x8	193e
3/16x1/4	8e	3/16x5	65e	3/4" x8	240e
3/16x3/8	10e	1/4" x5	75e	1" x8	297e
3/16x1/2	14e	3/8" x5	75e	1-1/2" x8	377e
3/16x3/4	16e	1/2" x5	82e	2" x8	458e
3/16x1	17e	3/4" x5	82e	3" x8	683e
5/16x1/16	8e	1/4" x8	128e		
5/16x1/8	10e	3/8" x8	148e		
5/16x3/16	12e				
5/16x1/4	13e				
5/16x3/8	14e				
5/16x1/2	15e				
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5/16x1	17e				
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3/8" x1/4	12e				
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3/8" x3/4	15e				
3/8" x1	16e				
1/2" x1/8	17e				
1/2" x1/4	18e				
1/2" x3/8	19e				
1/2" x1/2	20e				
1/2" x3/4	21e				
1/2" x1	22e				
3/4" x1/8	23e				
3/4" x1/4	24e				
3/4" x3/8	25e				
3/4" x1/2	26e				
3/4" x3/4	27e				
3/4" x1	28e				

TAPERED TRAILING EDGE	36" Lengths
1/8" x1/2	8e
3/16x3/4	11e
1/4" x1	14e
5/16x1-1/4	17e

Ninety Stock Sizes of Blocks
LEADING EDGE --- RC BALSA
CONTEST BALSA - QUARTER-SAWN

BAG OF BALSA
MILL ENDS, REJECTS, ETC.
NO. 1 BAG—all blocks 79¢
NO. 2 BAG—blocks, sheets 79¢

BASS WOOD SHEETS
1/16x2 1/2x18 15¢ 3/16x2 1/2x18 23¢
3/32x2 1/2x18 17¢ 1/4" x2 1/2x18 28¢
1/8" x2 1/2x18 19¢ 3/8" x2 1/2x18 35¢

GUY'S SELECT
SPRUCE TUFF & STRONG!
1/8" x1/8 x48 4e 1/8" x1/8 x36 3e
1/8" x1/4 x48 8e 1/8" x1/4 x36 5e
1/8" x3/8 x48 10e 1/8" x3/8 x36 8e
1/8" x1/2 x48 20e 3/16x3/16x36 6e
3/16x3/16x48 7e 1/4" x1/4 x36 10e
1/4" x1/4 x48 12e 3/8" x3/8 x36 20e
1/4" x1/2 x48 25e 1/4" x1/2 x36 20e

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Hundreds of illustrated
planes, motors, balsa,
fuel, dope, glue, etc. 25¢

JAPANESE TISSUE

Pre-war quality Japanese tissue
produced for us by Japan's lead-
ing model builder.
RED, BLUE, WHITE,
YELLOW, ORANGE, BLACK 7¢

BAMBOO PAPER

Heavier than our regular Japanese
Tissue. Bamboo Paper is very tough
and strong. Highly resilient on im-
pact for large models. 21"x31"
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BLACK, YELLOW 15¢

SIG NYLON

Beautiful white nylon. Very strong
but requires more dope than silk.
36"x48" PKG. \$1.00

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The finest pure silk produced spec-
ifically for model covering.
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YELLOW, GREEN, SILVER \$1.00

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Aircraft Plywood

1/32x6x12 25¢	3/32x12x12 60¢
1/16x6x12 30¢	1/8" x12x12 70¢
3/32x6x12 30¢	1/32x12x24 1.00
1/8" x6x12 35¢	1/16x12x24 1.20
1/32x12x12 50¢	3/32x12x24 1.20
1/16x12x12 60¢	1/8" x12x24 1.40

SIG DETHERMALIZER FUSE

Easy to light, glows hot, 5 FT.
absolutely will not go
out. Calibrated. 25¢

BIRCH DOWELS

1/8" x12 3 for 5¢	5/16x12 3¢
3/16x12 each 2¢	3/8" x12 3¢
1/4" x12 2 for 5¢	1/2" x12 4¢

FLIGHT RUBBER

Now packed in lightweight
cans to insure you fresh,
live rubber.
1 lb. can—\$4.50

1/8" x25" 30¢
1/8" x50" 59¢
3/16" x25" 48¢
3/16" x50" 85¢
1/4" x25" 80¢
1/4" x50" 115¢

PIRELLI RUBBER

1 lb. can—\$5.50

Hardwood Motor Mounts

3/8x3/8x12 10¢	3/8x1/2x12 12¢
3/8x3/4x12 15¢	

MASKING TAPE

NARROW TAPE FOR STRIPPING
1/4"-3/8" or 1/2" WIDE
STRIPS CLEAN 12 FT. ROLL 15¢

SEE YOUR DEALER TODAY.
IF HE CANNOT SUPPLY YOU,
ORDER DIRECT. PROMPT ONE-
DAY SERVICE. MINIMUM OR-
DER \$1.00. ADD 25¢ FOR
POSTAGE.

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MODEL-MAKERS' PINS

No. 8 1/2"	No. 20 1 1/4"
No. 14 7/8"	No. 24 1 3/4"
No. 18 1"	No. 28 1 7/8"
No. 17 1 1/4"	No. 32 2"

STATE SIZE WANTED
1/4 Lb. \$1.00 PKG. 15¢
1 Lb. \$3.50

RUBBER BANDS

Pure Gum-High Resistance to Sun & Fuel
No. 8 1/16x7/8 No. 32 1/8x3
No. 10 1/16x1 1/4 No. 62 1/4x2 1/2
No. 14 1/16x2 No. 64 1/4x3 1/2
No. 16 1/16x2 1/2 No. 105 5/8x2
No. 30 1/8 x 2 No. 107 5/8x7
1/4 Lb. \$1.10 1 Lb. \$3.65
PKG. 15¢

MUSIC WIRE

1/32x36 .05	1/16x36 .08
3/64x36 .06	3/32x36 .15
	1/8x36 .20

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Two Superior Grades

STANDARD

Tough, flexible and hot fuel-
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Polar Gray, Lemon Yellow,
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Colored 4 oz. 8 oz. Pint
Clear50 .90 1.40
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A heavy-bodied dope, hot
fuelproof, that will produce
a tough, durable, high-gloss
finish. High percentage of
solids for rapid build-up.
Same colors as Standard.

Colored 4 oz. 8 oz. Pint
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TOP FLITE

GAS KITS TOP THEM ALL!

Three terrific planes designed by George Aldrich, America's greatest stunt champion!



THESE 1/2-A MODELS SWITCH FROM CONTROL LINE TO FREE FLIGHT & BACK AGAIN IN A JIFFY!

Each kit contains: formed landing gear, push rod, elevator horn, wheels, bell crank, firewall, decals, and all necessary hardware. All parts are completely finished. Only select Grade-A balsa is used. Full size detailed plans with many step-by-step construction features making it easy to build and fly.

- Ideal for beginners... and experts, too!
- All feature famous JIGTIME CONSTRUCTION for easy, no-mistake assembly!



PIPER CUB

27 inch wingspan. This 1/2A scale flying model is so realistic that only the size makes it a model instead of the real thing! Includes formed plastic cowl, die cut clear plastic windshield.

Kit No. G-3
\$2.50



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27 inch wingspan. An outstanding favorite with all 1/2A model builders for years! Includes die cut clear plastic windshield.

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24 inch wingspan. Has the dash and class of modern Navy prop-jet design. Ideal for 1/2A gas engines. Includes formed clear plastic canopy.

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Ask your dealer for a
FREE Top Flite
PROP CHART

the NOBLER CHAMPIONSHIP CONTROL LINE



STUNT SHIP

Kit No. N-1

\$8.95

Wing Area 550 sq. in.
Wing Span 50"
Length 38 1/2"
Eng. Sizes .19 to .35

THE "WINNINGEST" STUNT MODEL EVER FLOWN... Won More Nationals and International Stunt Championships Than Any Other Model!

these CONTROL LINE COMBAT and STUNT TRAINERS are among America's greatest... two of the most successful planes ever designed!

Kit No. N-2
FLITE STREAK \$3.95

FLASH!

1958 NATIONALS
WINNER OF BOTH
Senior and Junior
COMBAT



Engine sizes .15 to .35
Wing Span 42"
Wing Area 390 sq. in.
Length 28"

BOTH OF THESE KITS CONTAIN:

- Full length shaped and notched leading and trailing edges and spars.
- Shaped fuselage.
- Select grade A balsa.
- Printed and precision die-cut balsa and plywood parts.
- Formed landing gear and push rod.
- High grade silkspan.
- Hardwood engine mounts.
- Complete detailed plans with many step-by-step construction features making it easy to build and fly.

HERE'S WHY THEY'RE SUPERIOR MODELS:

1. Full length leading, trailing edges and spars. Require NO SPLICING, an exclusive feature for this size and type of model.
2. Assembly is easier, faster — with perfect alignment.
3. This jigtime construction of notched spars, leading and trailing edges allows you to construct a symmetrical wing on a flat surface without special jigs, also making it warp resistant.



Kit No. N-3

\$2.95

Engine Sizes .15 to .25
Wing Span 31"
Wing Area 230 sq. in.
Length 22"

by the makers of famous TOP FLITES and POWER PROPS... the Props of Champs!
AVAILABLE AT ALL LEADING HOBBY SHOPS

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PROVED BEST at the "59" NATIONALS

MORE FIRST PLACE WINNERS

USED TOP FLITES AND POWER PROPS
THAN ANY OTHER BRAND!

HERE ARE THE WINNERS BASED ON INCOMPLETE RETURNS



NAVY CARRIER OPEN
Mrs. Virginia Randall
Colma, Calif.
437.51 points
Engine: Dooling 36
Fuel: K & B 1000
PROP: 8-9 POWER PROP
Plane: Grumman Tigercat

1/2A GAS F.F. JUNIOR
Brad Wilder
Burbank, Calif.
12:49.0
Engine: Hornet 049
Fuel: Nitro XX
PROP: 5 1/4-4 TOP FLITE
Plane: Satellite

1/2 GAS F.F. SENIOR
Ray LaHood
Omaha, Nebr.
14:52.2
Engine: Hornet 049
Fuel: Nitro X
PROP: 6-3 POWER PROP
Plane: Satellite

1/2 GAS F.F. OPEN
Victor Cunningham
Baldwin Park, Calif.
Engine: Hornet 049
Fuel: T. D. Racing
PROP: 6-3 TOP FLITE
Plane: Space Rod
(original)

A GAS F.F. SENIOR
Don Miller
Cleveland, Ohio
26:12.0
Engine: Hornet 051
Fuel: Nitro X
PROP: 6-3 TOP FLITE
Plane: Ramrod 285

B GAS F.F. JUNIOR
Bill Hunter
Sun Valley, Calif.
17:23.0 (new record)
Engine: Johnson 29
Fuel: Nitro XX
PROP: 10-4 TOP FLITE
NYLON
Plane: Satellite 1000

R.O.W. GAS OPEN
Mel Schmidt
Redondo Beach, Calif.
12:13.0
Engine: Cox 049
Fuel: Cox Red Label
PROP: 6-3 TOP FLITE
Plane: Hi-Trail 280

A GAS F.F. JUNIOR
Allan L. Ross
Phoenix, Ariz.
27:58.8
Engine: Hornet 051
Fuel: T. D. Red Label
PROP: 6-3 TOP FLITE
Plane: Original

R.O.W. GAS JUNIOR
Bill Hunter
Jr. Nat'l Champion
Sun Valley, Calif.
11:22.4 (new record)
Engine: Hornet 15
Fuel: Nitro XX
PROP: 8-4 TOP FLITE
Plane: Satellite 600



FAI SENIOR
Ray LaHood
Omaha, Nebr.
14:04.2
Engine: Cox 15
Fuel: Cox Racing
PROP: 8-4 POWER PROP
Plane: Orig.

FAI POWER OPEN
Howard Timlin
San Antonio, Texas
19:29.0
PROP: TOP FLITE (size?)

STUNT JUNIOR
John Gudvangen
Los Angeles, Calif.
556 1/2 points
PROP: 10-6 TOP FLITE

STUNT SENIOR
Bill Werwage
Berea, Ohio
608 1/2 points
PROP: 10-8 TOP FLITE

STUNT OPEN
Bob Palmer
Burbank, Calif.
544 points
PROP: 10-6 TOP FLITE

FLYING SCALE C.L. JR.
Michael Bryan
Nashville, Tenn.
205 points
Engine: K & B 29R
Fuel: K & B 100
PROP: 9-6 TOP FLITE
Plane: Eureka F-51

FLYING SCALE C.L. SR.
Elbert Rutan
Dinuba, Calif.
258 points
Engine: K & B 35 RC (2)
Fuel: Supersonic 100
PROP: 10-5 TOP FLITE
Plane: Fairchild F-27 orig.

FLYING SCALE OPEN
Walter Mooney
San Diego, Calif.
119 points
Engine: Albon Super
Merlin 046
Fuel: Ohlsson DZL
PROP: 8-3 1/2 TOP FLITE
Plane: Bleriot IV

1/2A SPEED JUNIOR
Jim Booker
Portland, Ore.
82.31 MPH
Engine: Therm. Hop. 049
Fuel: Th. Drone Racing
PROP: 4 1/2-7 POWER PROP
Plane: Original

1/2A SPEED SENIOR
Bill Brooks
Tacoma, Wash.
92.65 MPH
Engine: Space Bug 049
Fuel: Th. Drone Racing
PROP: 4 1/2-7 POWER PROP
Plane: Original

PAA CLIPPER CARGO .049
(Comb.)
Robert Sutton
Phoenix, Ariz.
140.02 points
Engine: Hornet 049
Fuel: Own Mixture
PROP: 6-3 TOP FLITE
Nylon
Plane: Orig.



R/C MULTI (Comb.)
Robert Dunham
Norwalk, Calif.
PROP: 12-6 POWER PROP

FLYING SCALE C.L. OPEN
William Ogden
E. St. Louis, Ill.
380 points
Engine: Fox 59
Fuel: Nitro X
PROP: 12-5 TOP FLITE
Plane: Focke Wolf 190

NAVY CARRIER JUNIOR
Larry Miller
Cleveland, Ohio
362.81 points
Engine: Fox 59
Fuel: Herb Brooks Spec.
PROP: 10-8 TOP FLITE
Plane: Skyraider

NAVY CARRIER SENIOR
Garry Korpi
Concord, Calif.
462.67 points
Engine: McCoy 60
Fuel: K & B 1000
PROP: 10-8 POWER PROP
Plane: Baby Bearcat

COMBAT JUNIOR
Charles Meinhardt
Long Beach, Calif.
PROP: 9-7 TOP FLITE

COMBAT SENIOR
James Cowart
Dallas, Texas
PROP: 9-8 POWER PROP

COMBAT OPEN
Riley Wooten
Lubbock, Texas
PROP: 9-8 POWER PROP



FAMOUS FATHER AND SON TEAM, BILL & BOB HUNTER.
Team up with Top Flites and Power Props to fly away with three major awards. Shown above with Bob and Bill are Mother Jennie and Sister Barbara — all model airplane enthusiasts.

PROVED BEST

BY BOB HUNTER

'59 OPEN NATIONAL CHAMPION

'59 GRAND NATIONAL CHAMPION

AND BY BILL HUNTER (AGE 11)

'59 JUNIOR NATIONAL CHAMPION

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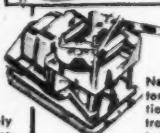


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Ramrod 600

(Continued from page 19)

cept that full ribs are used in the wing instead of the "semi-ribs." Plans may be scaled up by multiplying all dimensions shown by four, but, of course, full-size plans are available.

The wing is started by pinning the notched trailing edges and leading edges to your workbench. The 1/16 x 3/16" false rib support is then cemented to the back of the leading edge. Clean off all cement which could later hold up a false rib. Fit all ribs except at dihedral joints, and cement in. Since the tip spars are of an unusual size it is best to cut them from 3/32" sheet, as is done in the case of the tapered stab spars. After the cement holding the ribs in has dried, slide the spars in place and coat all spars to rib joints with cement. False ribs are added last, but do not put them in adjacent to dihedral joints until sections have been joined. Note that only the top of the wing is planked with 1/16" sheet between the two center ribs. After the dihedral has been added, remaining false ribs and gussets put in place, shape and sand the wing, cover it with Jap tissue, then add the end plates. After the end plates have dried, spray the wing with water, and dope.

Start the stabilizer by pinning notched trailing edge, tips and leading edge to the board. This is followed by the bottom ribs or cap strips, which are placed right on the board. Next, the two separators are cemented to leading and trailing edges. Again, wipe off all cement which could hold up top cap strips. Follow this with the gussets, two center ribs, and tapered spars. It is a good idea to use 1/8" scrap wood between the two center ribs to separate them to the right gap while cement is drying. After this much of the stab is dry, unpin the leading edge, shim up 1/16" along its entire length and repin. The top cap strips may then be cemented in place. Let this dry thoroughly before lifting stab off board to shape, sand, and cover.

Before water doping and doping, cement in rudder, dorsal fin, key, rear hook, and take-off pegs, and let dry.

After all fuselage parts are cut out and spliced where necessary, it may be started by pinning the top to your flat work bench or board. Add two or three bulkheads, then cement a side around it. Add the rest of the bulkheads, including firewall, engine mounts, and the plywood gear mount with gear already attached; then the second fuselage side. Having the basic fuselage complete, add engine, timer, fuel tank, and stab platform. At this point, locate the correct pylon position by strapping on the wing and tail and sliding the wing back and forth until the model balances at a point 2 1/2" forward of the wing's trailing edge. (The extra 1/2" is merely to compensate for weight added later.) Then mount pylon in such a way that the wing will be directly over this position when assembled. Finally, add wing platform, hooks, fillet pieces, and bottom sheeting. Shape, sand, and dope. It is not necessary to cover this type of fuselage and in certain ways is disadvantageous. If color is desired, try staining Rit dye and thinner into the dope through an old nylon stocking.

Finally, hot fuel proof the entire model. We have been using for some time now and recommend a product called Fuller-Plast, which may be obtained from any Fuller paint dealer. We use the clear gloss. It brushes on well over nitrate dope, if first thinned out. Fuller-Plast is hot fuel proof only when thoroughly cured. One way to determine this is to keep the mixing bottle until the Plast has turned to jelly (with the lid on), and then fire up the engine for the

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first time. The time will vary with the amount of catalyst used.

Before any actual flying, it is well worth your time to do a little pre-adjustment at home. The first step of this consists of checking the CG position and making any necessary adjustment with clay or lead to insure it is 2" in from the trailing edge (80% CG). Next, steam out any stab warps, and warp the wing, if necessary, to insure it is set slightly for a left turn. Remember that it is necessary to overwarp to compensate for the "memory" a surface has. If at all possible, let the model set for at least a week after the surfaces have settled down, before flying.

Attempt to accomplish two things by test gliding: Getting the incidence correct, and inducing a medium to wide lefthand circle by shimming up the left side of the stab platform.

The first power flight should be made with the rudder offset slightly to the left, the prop on backwards, and the engine running as high as possible. If we have "eyeballed" everything correctly, the model will display a shallow right hand power turn. If so, key the back of the tail and proceed to use more power. If yours is like most Ramrods, it will groove itself in a right hand corkscrew. If it should be excessively "loopy," do not add more down-thrust, but decrease decalage and clay the tail end to compensate. This can be overdone, however, so proceed with caution. In no case should the CG ever get as far as 90% back from the leading edge.

We are sure you will be more than happy with your Ramrod and that you will want to build more of them.

Stuntacular

(Continued from page 12)

—and then some. When 70' of .030 flying line is used, full control is obtained by using just a little over half of the handle action!

This plane is very stable—and responsive to controls. The slightest handle movement gives immediate results. There is absolutely no "time lag" with Mono-Line controls. Don't confuse the stunt control units with the spiral wire cam, sports units, or with the speed units as they were not designed for stunt flying. The ABC Stunt-Master unit has a brass cam that uses six complete turns to accomplish total bell-crank movement. The total linear movement on this control unit is ¾" (¾" for up —¾" for down).

An added feature of Mono-Line control units is that you always have exactly the same amount of up and down control. Another bonus is the automatic "return to neutral" feature. The elevator cannot be worked from the back (like on two-line ships). This means that the elevator is always locked in the position that the flier wishes—whether the line is tight or not. As a result, smoother loops and other maneuvers can be accomplished with ease. You do not have to "follow through" on the handle during loops (as you did with two-line controls). With Mono-Line controls the elevator does not neutralize at the top of a loop. Therefore, less flying skill is required to fly Mono-Line equipped planes.

Windy weather flying is not a problem for Mono-line ships as excessive whipping is not required to maintain control when the line goes slack. All the flier's efforts can be directed to performing the maneuvers properly. He no longer has to "out-guess" what his plane is going to do on a slack line.

No plane will perform properly if the motor doesn't run consistently. A special

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tank was designed for Stuntacular to eliminate this potential problem. The fuel is packed to the back outside corner, assuring peak engine performance during all maneuvers. You will note that only one air vent is used, and that it faces directly into the slipstream. If the tank is built as shown on the plans, your engine will run exactly where you set it. It allows the engine to run at peak during all maneuvers—including level flight. If you prefer your engine to run rich during level flight, just reverse this air vent set-up. That is, run the air vent from the outside front corner to the inside front corner. When the air vent is installed in this manner, you will still lean your motor out on the ground, but as soon as the plane takes off, the engine will break back into a fast four-cycle. However, it will run at peak during all maneuvers. If you have never used this type of tank before, give it a try. (Note: This tank is excellent for combat ships.)

A special leadout (optional) was attached to the control unit. It serves two purposes. First, it makes the line hook-up easier, and second, it prevents a "kink" in the flying line at the wing tip eyelet should your model have a rough landing. Never fly a Mono-Line ship with a kink in the line at this point (eyelet) as the controls will be erratic. All you will get is full up and full down—but nothing in between. Check the flying line before each flight.

Only a small portion of this leadout is flexible cable. The reason the whole piece is not cable is that it would "absorb" too much control (torque). The brass connector button can be machined on a lathe. Use acid core solder and stainless steel soldering flux when constructing this leadout—and be sure to neutralize the acid after the soldering is completed. Use a small amount of ordinary baking soda in a cup of hot water. After the piece has been neutralized, wash it with hot water, let dry, and then put some light machine oil on it to prevent rusting. (Note: Use acid core solder on everything that you solder—and neutralize.)

Round out the brass wingtip eyelet where the leadout comes out. If there is a sharp edge there, it will cut the flex leadout at this point—and snap! No need to explain what will happen to the plane when this happens.

CONSTRUCTION

Select balsa carefully. Soft balsa is used throughout the model, except for the wing ribs and the rudder.

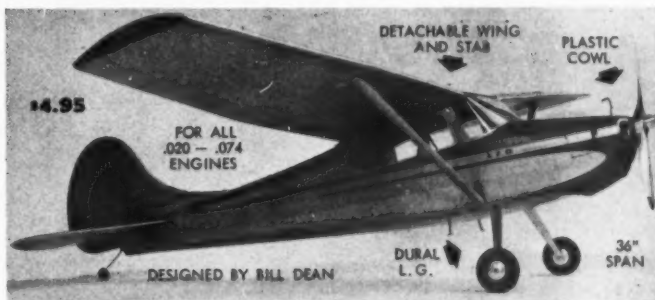
The wing can be made first. Cut out all the ribs (including the hardwood mounting rib). The $\frac{1}{4} \times \frac{1}{4}$ " spars have to be spliced, preferably on the outboard wing panel. After the spars are ready, position all the ribs between the two main spars and push the trailing edge on—but do not cement it on at this point. Cement the ribs to the spurs and add the leading edge. Now the trailing edge can be cemented on. Occasionally, sight the wing from the trailing edge to be sure you don't build a warp into the wing (once the leading edge planking is on, these warps will be hard to get out). The $\frac{1}{16}$ " sheet leading edge planking is cemented on now. Also the center section planking, but on the bottom only. Leave the top center section open as it can be covered after the control unit has been installed.

The ABC Stunt-Master control unit can be installed at this point. Loosen the nut on the unit and remove the mounting bracket from the stem portion of the control unit. Slide the stem and cam portion through the holes in the ribs until it reaches the hardwood mounting rib. Now

(Continued on page 56)

CESSNA 170

Another New Jetco R/C "Superscale"!



Latest from Jetco is this 1/12 scale, 175 sq. in. wing area, replica of the classic CESSNA 170. Our model version already has many "wins" to its credit, including 1st in F/F Scale at the European USAF Model Contest, in Germany. This R/C or F/F "Superscale" is a companion model to our recently released PIPER SUPER CRUISER and boasts many of the same kit features. We made our annual trip to the Nats (Los Alamitos, California) and are happy to report that Jetco designs were the top placing kits in Flying Scale. For example, the FAIRCHILD PT-19 (1958 Winner) placed 3rd and 5th in R/C Scale — while the MUSTANG F-51 H (already a 3-time Nats Winner) collected 1st, 2nd and 4th in Junior C/L. Open F/F Scale went to Walt Mooney (who designed our famous REARWIN SPEEDSTER and MOONEY MITE kits), flying his new Bleriot Monoplane. Jetco THERMIC GLIDERS naturally outnumbered all other glider kit entries put together — as happens every year! We snapped up the rights to a couple of NATS WINNERS — which are so hot, we're keeping them under wraps until the kits are ready for release. In the meantime, why not visit your local dealer and take a look at that Cessna 170!

Bill Dean

Some of the other fabulous kits in Jetco's '59 Line

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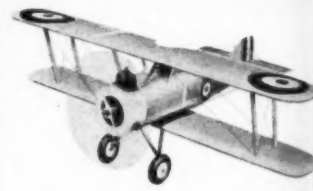


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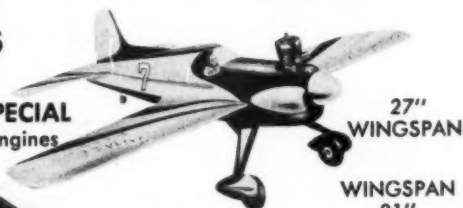
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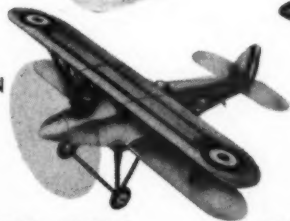
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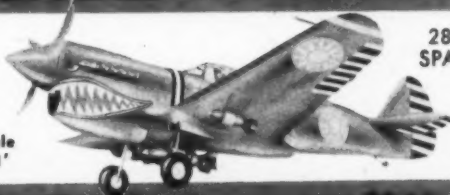
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slip the mounting bracket back into its proper place. Put the nut on the unit, but do not pull it up tight—not yet.

Carve the wing tips to shape. Use soft balsa on the inboard tip and hollow it out. Hard balsa is used for the outboard tip—but do not hollow it out. It will require an additional 1 3/4" ounce of lead for counter weight. Locate the hole for the brass eyelet on the inboard tip and cement it into place. Make a paper tube and slide it through the holes in the ribs (inboard panel only). This tube aids in hooking up the flying line. Both wing tips can be cemented onto the wing.

Now comes a very important part, aligning the control unit up with the wing tip eyelet. The stem of the control unit must line up with the back part of the eyelet (when viewed from the top), not the center as shown on the Mono-Line instruction sheet, as this is where the flying line will be once the plane starts forward motion. If you do not align the control unit exactly as shown on the plans, you will not get smooth control under tension. Be SURE THIS PART IS DONE RIGHT! After you have the control unit lined up, tighten the nut and put a liberal amount of cement around the nut and mounting bracket. Be careful not to get any cement on the brass cam. Under no circumstances solder the nut to the control unit as it may loosen the torsion wires inside the unit.

The top center sheeting is cemented on now. Leave an opening around the control unit area so that the pushrod can be fitted into position. Build a box opening on the bottom of the inboard wing just below where the control unit ends. This opening may be left open or you can make a balsa cover for it (however, be sure it is removable).

Last step is to add the 3/16" stationary flap. Sand the entire wing until smooth and give it several coats of clear dope. The wing may be covered now.

Cut out the two fuselage sides and all the formers. Cement formers #1, 3 and 4 to one side. When dry, cement the other fuselage side to them. Now cement a piece of 1/4" x 1/4" balsa to the extreme end of the fuselage. When this is dry, cement formers #5 and 6 into place. Motor mounts can be cemented in next, followed by the landing gear and tail skid assembly. Cover bottom of fuselage and use the planking crossgrain for added strength. Do not put the top fuselage covering on now. It goes on after the entire control system has been hooked up and soldered.

Fill in the front portion of fuselage with block balsa. The cowl is carved out from a solid block of medium balsa and fitted around your particular engine. The tension spring hold-down is installed next. This type of hold-down is a sure way of keeping a cowl in place as engine vibration cannot loosen it during flight.

Construct gas tank and install. To fill the tank, hold the tail of the plane straight up, and fill through the air vent tube. When the tank is full, you will hear it "gurgle" into the engine intake.

Make the elevator and stab section out of 3/16" soft balsa. Insert a piece of 3/32" I.D. brass tubing in the elevator horn. Cement completed wing and tail into fuselage.

The pushrod is next. It is made in two pieces and is connected with a tubing splice. Reason for the splice is to assure a simple way of getting "neutral" elevator position when the control unit is in "neutral." Drill a 3/32" hole in the control unit bellcrank. Insert the two pieces of pushrod in their respective places, and

(Continued on page 59)

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.35 \$1.50
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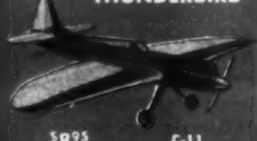
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Biplane plane for combat or learning to fly. Quick, easy construction. Wing span 50". Wing area 330 sq. in. Recommended engine: VECO ".19" or ".25".

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A hot plane for team or rat racing. Simple, fast construction. Fun to fly. Wing span 31". Wing area 170 sq. in. Recommended engine: VECO ".29".

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The editor's selection of all time favorites, including completely new combinations of the greatest designs. All types!
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PLAN OF THE MONTH

- 64.** STUNTACULAR: .29-.35 Mono-Line.
RAMROD 600: FF, .15's.
Tremendous combo! Dale Kinn's beautiful stunter, and St. Jean's new rules Ramrod.
- 4.** SURE FUN: UC Sport, .29-.35
PROFILE SILVAIRE: FF Profile, 1/2A.
ZEPHYR: Rubber, Fuselage
Control line on floats. Sport Gessle.
- 9.** AEROCOM'DER: Scale, U/C, 2 .15.
MARS: Bob Palmer stunt, .29-.35.
NOBLER: Aldrich's Nats Winner, Stunt, .29-.35. Palmer and Aldrich, plus a twin ukie. Imagine!
- 10.** SMOG HOG: Bonner's Multi RC, .19-.35.
STRATOLINER: 2 Half A, U/C.
GUARDIAN: U/C Scale, .29 up.
Greatest Multi RC of all time—a beauty!
- 11.** GAMBLER: Mirror Stunt Winner, .29-.35.
DOUGLAS B-66: ducted fan FF, .049.
B-66, the ducted fan job that beats all others.
- 13.** T-CRAFT: FF scale, .049.
FENO: Combat, stunt, .29-.35.
PADDY'S WAGON: Contest FF, .049.
Paddy's Wagon—one contest job ok for beginner.
- 14.** HEATH PARASOL: RC, FF, Scale, .075 .09.
GUARDIAN: Nats carrier winner, .29's.
SHARPIE: FF Sport, .02-.049.
—Guardian a dilly.
- 15.** RE-B: WW1, U/C, .29-.35.
FLAPPING WINGS: Rubber, ornithopter.
BOOMER: FF, sport, pusher, .049.
Can planes fly like birds? Ornithopter sure does.
- 22.** MOONEY MITE: 1/2A Scale FF.
'55 RAMBLER: .29 Team Racer.
WACO CABIN: 1/2A FF Scale
The Mite, stable, real looking low winger.
Rambler still beats 'em. Waco—Cute!

- 43.** EQUALIZER: .15 to .19 multi, RC.
QUICKIE TRAINER: Speed, .29.
AMAZOOM: FF, contest, .15.
deBolt's best, the Equalizer?
Amazoom—Stan Hill's hi-thrust.
- 44.** CONVAIR'S DELTA: Jetex FF.
LIL DYNAMITE: .15 stunt, UC.
SWAT: 1/2A, FF, contest.
A trio of exceptional planes.
- 45.** ASTRO-HOG: Multi RC, .29-.35
MITCHELL: Profile, .09's, .15's UC.
Dunn's low wing radio—tops!
Nothing matches this multi.
The Mitchell a fine flier.
- 46.** PROJET B-47D: U/C, .15's.
RUFFY: Stunt, .29-.35.
NOR'EAST'ER: Nordic glider.
B-47D, beaut of a project
Ruffy: big winner—it's new!
- 47.** FOKKER E-3: 1/2A, FF, Scale.
NAVY RACER: Rubber, semi-scale.
WOODY: .29-.35, UC Combat. Hot!
E-3, beautiful model, fine flier.
- 48.** SPORTCOUPE: .09, U/C, Stunt.
WHATIZIT: .35, Combat, Wooten.
SWIF-F-FT: Jetex, two sizes!
Whatizit, settles fuse-wing debate!
- 50.** DUMBO: PBY Scale, U/C, .19's.
FRENCH OLDTIMER: 1914, 1/2A, FF.
Dumbo, the Catalina, man-sized ukie, takes off, lands on water or ground.
- 51.** AMERICANO: .15 FF, by Blanchard.
BOMARC: Scale, Jetex, missile.
CUTLASS: Sport U/C, .049's.
Scorpion power makes Bomarc terrific flier. Americano is National Champ's very latest.
- 52.** GAUCHO: RC Stunt, .29-.35.
THE CHAMP: Best U.S. Wakefield.
LAIRD SOLUTION: U/C Scale, .15-.23.
Gauchito, Argentine Champ, does pattern inverted. Champ, a single Wakefield!
- 53.** SNAP: Sport U/C, .19-.23.
PELICAN: PAA Cargo, .049.
WINDMILL: FF, 'giro, .02-.049.
For proto take-off and landing realistic Snap tops 'em all. Other two, collector's items.

- 54.** SATELLITE: Hunter's FF, .19-.35.
SUPERMARINE S-6B: U/C Scale, .09-.15. Satellite is top contest free flight '58-'59. Schneider racer, S-6B seaplane is one of FAST club's
- 55.** DETROIT STUNTER: U/C, .29-.35.
HORNET MOTH: FF, Scale, .02-.049.
THE BARDON: Wakefield.
D'trait St.: McDonald's Strathmoor, Nats favorite. Bardon: Canadian and US Nats winner, tops in rubber.
- 56.** RYAN PT-22: U/C, .19-.25.
SNIPE: Gurnett's Nordic.
Lovely scale job, that PT, with workable flaps, throttle.
Tow-line glider long, strong wing, right sections, etc.
- 57.** Twin Lizzie: 1/2A FF.
Com-Bat: U/C, .29-.35.
Fireboat: Marine, RC.
T-Liz, a cute sport job.
The boat, Musciano, a beaut.
- 58.** SE-5: FF, .09-.15
PIED PIPER: Rat Race, UC.
1/2 WAVE: RC, .049
SE-5 most beautiful flying scale model ever published.
- 59.** GASSER: Willard RC, .09
1958 WAKEFIELD WINNER
SKY LANCER: Team, Proto, .29
Gasser, hot pylon racer. Both the others beauties, too.
- 60.** BELLANCA: Scale U/C, .19-.29
HALF ALPHA: FF, .049
DUNWOODY GLIDERS
Gliders (4) from Dunwoody series of articles.
- 61.** TRI-TRAVELER: Sc, FF, .049
HOUDINI: RC, .15
DIZZY BEE: Sp., U/C, .29
Maneuverable but stable, Houdini, a low wing; Dizzy Bee, Lauderdale's latest Mono-Line.
- 62.** SAFIRE: Delta U/C St., to .35.
ASTEROID: Rubber and glider.
THE HOOK: Free flight, 1/2A.
Different but good, the Safire. Asteroid for beginners, but is contest winner, too.
- 63.** WACO GLIDER: Scale towliner.
BI-Fli: RC, Inter., .15's.
GUIDED MISSILE—U/C Combat, .35's.
Wooten's latest combat is the Guided Missile. Bi-Fli great vari-comp stunter, by Kraft.

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29. Cougar, '55 Nordic Winner, Dizzy Boy

34. Corben Super Ace, Cessna 310, Profile Lightning
48. Mustang UC, Gliders S, Bi-Gone FF.

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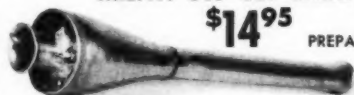
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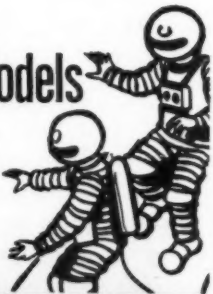
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solder them together. Be sure that the elevator is in level position.

Leave room at the end of the fuselage to disconnect the pushrod from the elevator horn as this will have to be done after the model has been painted. Then the elevator will have to be worked up and down several times to remove stiffness (caused by doping). Stiff hinges spell certain disaster for Mono-Line flying. The entire control system must be absolutely friction free. This point cannot be over emphasized. Read the Mono-Line instruction sheet (comes with each unit) carefully several times. After you are satisfied that the control system is working properly, cover the top of the fuselage and install the rudder. Carve the canopy form out of balsa and stretch a piece of heated cellulose acetate over the form.

The finishing process is up to you. This particular plane was covered with yellow silk and was trimmed with red dope. Regular dope was used throughout, and two coats of TUFF fuel proofer were sprayed on for fuel protection—and a high gloss. If you decide not to cover your model with silk, suggest you cover it with Silkspan. Finished weight should be between 32-35 ounces.

The balance point is further forward than on most stunt ships. When the flying line is hooked up, it will move the CG back since all of the weight of the flying line is behind the CG. This condition doesn't occur on two-wire ships as the line weight isn't as heavy as the solid Mono-Line flying line.

Now the big moment is at hand. The test flight. As stated before, Stuntacular is not a beginner's plane. We assume that you have flown some Mono-Line ships before and that you have the feel of how

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8-4 8-6 8-8 60c
5-3 5-4 5½-3
5½-4 6-3 6-4 25c
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11-4 11-6 \$1
RC 12-4
12-5 12-6 \$1.50

2 Blade Pusher
5½-3 5½-4
6-3 6-4 25c
8-6 85c
9-6 10-6 \$1
3 Blade Pusher
6-3 50c

3 Blade Tractor
5-3 5-4 6-3 6-4 50c

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John Maloney's M.A.N. Memo No. 8

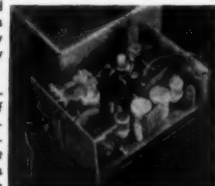
In our memo No. 7 we stated that three modelbuilders won team race at the Memorial day contest in Pittsburgh. This was not so, the event was RAT RACE. The first picture shows these modelbuilders with their planes. 1st Atkinson, 2nd Quick, 3rd Umstead. All were using OS Max 29's. These men are from Baltimore and have an impressive list of wins in this area under their belts. While on this subject, contest wins—we just learned that Ken Willard won 1st place at the 59 Nationals in intermediate R/C using a Max 15 R/C. Also quite a



Atkinson - Quick - Umstead

contingent from Bakersfield many using Max 15 R/C's \$13.95 did well in rudder only. The above news was per Dick Riggs who placed 3rd in R/C scale with his beautiful PT-19. Seems that the AMA could not get their records aboard their returning plane from Los Angeles so we could not positively confirm the above. The writer could not attend the Nationals this year as a son was born to the Maloneys on July 18 (John William). The modelbuilders of Richmond Indiana should be congratulated on the fine all around contest they held on August 16th. Max 15 R/C's & Contolraire Receivers placed 1st and second (Jack Port & Russ Brown). The writer flew in multi & won a very unburned beak.

We have a lot of comments on this type of adv. Our purpose in running these advertisements is to acquaint modelbuilders on various products available from World Engines and also we place the adv. in the hope that dealers will order said merchandise for these modelbuilders. We offer same day service to dealers. This service often requires many overtime hours on the part of our Mr. Johnson who is the man to ask for if you phone in your order. Our number is TW 1-3771. World Engines offers a very wide range of merchandise in the power model field. Kits R/C fuel, Lee's dope, silk, props and an unending list of accessories. Our second picture shows the Contolraire No. 3 3 volt tone receiver. This Rx is good on hot days, has good stability—yet extreme range particularly when used with our HH-T-CW transmitter \$34.95. It comes with relay. 3rd picture shows the OS multi servo very reasonably priced at \$9.95 has brass pinion, nylon gear & uses slider on printed cir. board. Current drain 500 ma. The last photo shows the new OS 15 contest diesel—has baffled piston—starts easy and is a real contender for the FF honors. Twin Ball Brg. Limited supply.



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Mono-line operates. If you have never flown a model with a Stunt-Master control unit before, you are really in for a pleasant surprise. The amount of elevator action is considerably more than that obtained from the speed or sport units. So, to be on the safe side, suggest you set your engine on the rich side for the first flight. Remember, the control response will be instantaneous—whether the line is tight or not! At first you will not accept this fact if you have been a two-line flier. You remember only too well what happens when your lines went slack. However, once Mono-Line has saved your plane from certain crackup (because of a slack line) you will be "sold" on it. The extra cost of the control unit is cheap insurance for your plane.

Stuntacular was designed to be flown on 70' of line to conform with the present AMA rules. However, it can be flown on a much longer line. The line length depends on the size (and power) of the engine used. With a good 35 you can safely use a 125' x .028 line, but additional weight must be added to the outboard wing tip.

This long line stunt flying can't be beat! It gives you the extra room to do any kind of maneuver that you desire. And you never have to worry about hand launches, or landings, as you always have complete, positive control. No modeler can say he has flown every kind of stunt plane until he flies a Mono-Line stunter. That \$1,000 cash offer is still open to the first contestant that wins high point in stunt at the Nats using Mono-Line control. It could be you. Why don't you give it a try?

Whistler

(Continued from page 16)

put on the joints, and poorly joined surfaces will not stay together.

When the surfaces have been joined together, strengthen the joint area with a coat of silk, or fillet the underside with strip balsa reinforcement. Brush thin film of clear dope over the joints every so often before going flying. This imparts a certain amount of elasticity to the joints, preventing the cemented areas from becoming too brittle and snapping under the strain of a powerful catapult.

Flying: The adjustment and balance of a catapult glider varies slightly from the conventional glider, but these small differences determine success.

Trim the model with clay ballast to eliminate the stall, and put only a slight turning tendency in the glide (by warping a wing panel) if it does not already have an inherent turn as a result of construction.

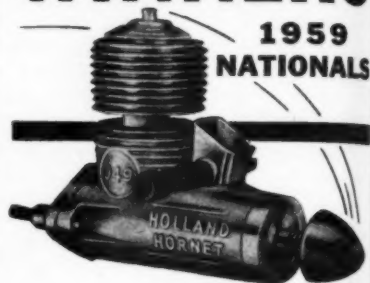
Six strands of $\frac{1}{8}$ " flat rubber, five feet long, makes a nice starting catapult. For safety drive a stake into the ground as a catapult anchor instead of having someone hold the catapult (this will prevent a creased scalp).

You will discover that, as you increase launching power, the model tends to roll out with speed to spare. To eliminate this, gradually warp down the stab trailing edge (on one side only if additional trim is also required), and remove some clay ballast.

After preliminary flight tests have been made, revise your catapult to eight strands; it will then be slightly under four feet in length. When you haul back on this much power, just make sure you've got plenty of room and keep your eyes peeled for the glider tends to disappear.

WINNERS

1959
NATIONALS



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- 6 FIRST PLACES
- 5 SECOND PLACES
- 6 THIRD PLACES
- 4 FOURTH PLACES
- 5 FIFTH PLACES

AMA HORNET RECORDS

TYPE	CLASS	AGE	TIME	ENGINE
LAND PLANE	1/2A JR.	22:38.0	.049	HORNET Holder: J. D. Krainock—Sepulveda, Calif.
	1/2A JR.	14:52.2	.049	HORNET Holder: Ray La Hood—Omaha, Nebraska
	A JR.	27:58.8	.051	HORNET Holder: Allan L. Ross—Phoenix, Arizona
SEA PLANE	A SR.	26:12.0	.051	HORNET Holder: Don Miller—Cleveland, Ohio
	1/2A JR.	8:20.4	.049	HORNET Holder: Burt Ballentine—No. Hollywood, Calif.
	1/2A SR.	5:03.7	.049	HORNET Holder: Jack Arkovitch—Van Nuys, Calif.
CLIPPER CARGO	1/2A OPEN	11:43.8	.049	HORNET Holder: Harper Kirby—San Diego, Calif.
	1/2A OPEN	140:02.02	.049	HORNET Holder: Robert Sutton—Air Force

HORNET EACH \$695
.049—.051

NOTICE. HORNET custom quality cannot be turned out on a mass-production basis. Prices subject to change without notice.

HOLLAND ENGINEERING CO.
12926 Satcoy Street, North Hollywood, Calif.

HOLLAND HORNET

World Wakefield Championships

(Continued from page 23)

stood up well to motor breakages. Modern folding props, however, proved vulnerable where no form of protection, (such as a winding tube, or a shield like that used by Bilgri) was employed. Britain's Roberts, one of 20 contestants who had recorded maxes in both the opening rounds, broke two props in the third round during winding. The British team fell from 2nd to 5th position.

At the end of Round 3, the need for a fly-off began to appear certain. There were now 13 entries on the board with perfect scores: Bilgri and Hatschek of the U.S.A.; McGillivray and Mackenzie of Canada; Zurad and Kossowski, Poland; Dvorak, Czechoslovakia; Zapachny, Russia; Tysklind, Sweden; Hyvarinen, Finland; King, Australia; Krizma, Hungary and Suter, Switzerland. So to Round 4.

Once again, America and Canada came through with perfect team totals and things really began to look rosy as their team scores rocketed to 2133 and 2057 points. The Italians also clocked three maxes to climb to 4th place, with 1928 points, 53 points behind the third place Finns. Meanwhile, many teams from which much stronger opposition had been expected were falling well down the list. The Hungarians, fielding the three modelers (Benedek, Krizma and Azor), who had won the team championship last year, were 7th, Russia 10th and the Swedes, past winners and always a threat, were 11th. The Czechs, who can usually be relied upon to place near the top, were among the also-rans at 15th position.

FLASH!

AMERICA WINS THE NORDICI
SEE NEXT MONTH'S ISSUE!

The final round started with no less than nine modelers with perfect scores, and still the maxes came, but Joe Bilgri was out of luck with 17 seconds short of a maximum and was thereby eliminated from the fly-off, as was 1954 winner Alan King of Australia who clocked only 1:37 to drop to 17th in the final placing. Seven contestants survived to share the top position: McGillivray, Mackenzie, Hatschek, Zapachny, Dvorak, Zurad and Tysklind.

Gradually, the remaining places were sorted out: Bilgri 8th, Portugal's Cardoro Sueno 9th, Herb Kothe 10th. Final team placings put the U.S. and Canada way out in front with 2,656 points and 2,571 points, respectively. The British, recovering from earlier setbacks finished 3rd, 163 points behind Canada and two points ahead of Finland. Italy was 5th, one point in front of Germany.

According to FAI rules, the winner is the contestant who achieves the highest score total in the five rounds, so that if two or more return the same score, the result is a tie and the fly-off is only to decide who shall hold the trophy. But, of course, no one looks at the final result in this light and a fly-off is invariably an exciting climax, especially when it has such a strong international flavor as on this occasion with two Canadians, an American, a Russian, a Pole, a Swede and a Czech competing for the coveted Wakefield Cup.

All seven models were airborne within the five-minute starting period allowed for the fly-off. Six of them once again went on to better three minutes and, with flight limits off and more drift than in the earlier rounds, timers were having to concentrate hard to keep the models in sight. Finally,

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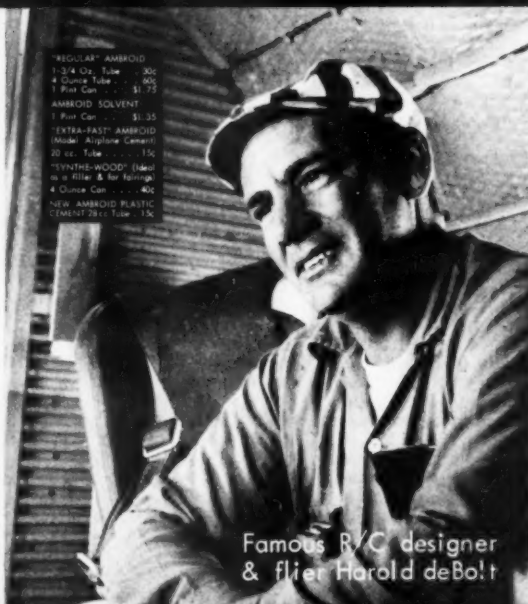
\$1⁸⁰

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BEND, OREGON

HAROLD deBOLT USES AMBROID!

A leading name in R/C modeling is Harold deBolt, owner of the Buffalo, N.Y., deBolt Model Engineering Co., "Home of Design-Engineered Models". Naturally, the designer of such top quality kits as the R/C "Live Wire" series, is an Ambroid fan from way back! We talked with Harold on the plane (see photo), returning from the '59 Nationals, held at Los Alamitos, California — where he had just won a place on the 3-man team, which will represent the USA at the 1960 R/C World Championships in Europe — and he told us that he first used Ambroid 30 years ago. "I do plenty of flying" — said Harold — "and I can't afford to waste valuable building time and R/C equipment by using a second-rate cement. The slight extra cost of Ambroid is negligible and it would be mighty expensive to use anything else but the best in any of my models".



Famous R/C designer & flier Harold deBolt



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it was only Dvorak's that was still being observed and he emerged the winner with a flight time of 4:45, followed by Hatschek with 4:16 and McGillivray with 4:05. So, for the first time, the famous and widely-travelled Wakefield Trophy goes to Czechoslovakia.

Winner Frantisek Dvorak flew a fairly conventional model: Radoslav Cizek's XL-58 design. It had a built-up rectangular section diagonally-braced fuselage, with sheeted forward section, polyhedral elliptical tipped wings mounted on a low streamlined pylon and a twin-bladed folding prop. Cizek flew a similar model. Generally, however, there appeared to be little standardization among team models. Naturally, the Russian ships created consider-

able interest, as they had many notable features. Matveev had a sleek design with an aluminum tube fuselage and parasol-geodetic wings. Ivannikov (holder of the World's absolute model speed record) demonstrated his distinctive model with its strange "canoe paddle" 25-inch prop having folding blades carried on 6-in. radius wire "outriggers." Zapachny flew a model with a forward fin.

After the contest there was the usual banquet and convivial get-together. East met West and liked it, and, as a result, one of Bob Hatschek's models went to a strange new home in the USSR and one Russian model found itself whisked across the Atlantic to equally unfamiliar surroundings in the USA.

WAKEFIELD CUP—INDIVIDUAL RESULTS (First 10 places)

1. Dvorak, F.	Czechoslovakia	900 + 285
2. Hatschek, R.	U.S.A.	900 + 256
3. McGillivray, J.	Canada	900 + 245
4. Zurad, S.	Poland	900 + 230
5. Zapachny, V.	Russia	900 + 198
6. Mackenzie, D.	Canada	900 + 184
7. Tysklind, S.	Sweden	900 + 121
8. Bilgri, J.	U.S.A.	883
9. Cardoro Sueno, A.	Portugal	875
10. Kothe, H.	U.S.A.	873

F.M.A. CUP—TEAM RESULTS

1. U.S.A.	2,656 points.
2. Canada	2,571 points.
3. Great Britain	2,408 points.
4. Finland	2,406 points.
5. Italy	2,358 points.
6. Germany	2,357 points.
7. Sweden	2,301 points.
8. Russia	2,281 points.
9. Portugal	2,257 points.
10. Hungary	2,257 points.

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- Relay Operation: 6 MA on idle, rises to over 4 MA on signal for positive relay operation.
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No. 55— " 6000-7000...	1.75
No. 65— " 5500-7500...	5.00



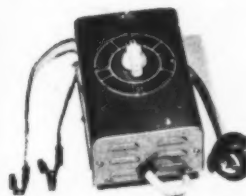
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TYPE 41—4V., 1.5 Amp. Hr. Cap. (1 1/2" x 1 1/2" x 1 1/4")	\$1.65
TYPE 28—2V., 6 Amp. Hr. Cap. (4 1/4" x 2 1/4" x 1 1/4")	\$3.00
TYPE 26G—2V., 6 Amp. Hr. Cap. (4 1/4" x 2 1/4" x 1 1/4")	\$3.75



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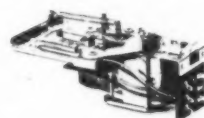


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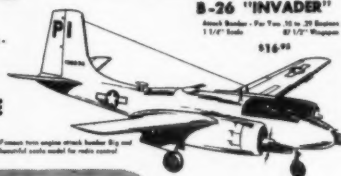
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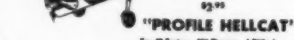
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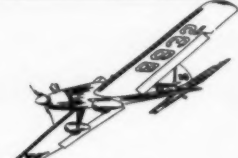
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**FLASH
FOX 29X WINS**

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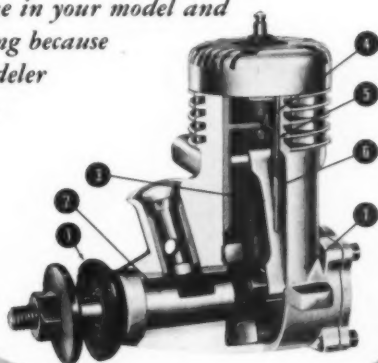
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THE BIGGEST LITTLE PLANE IN THE WORLD

powered with the fabulous
Thimble-Drome Pee Wee
.020 engine

Wingspan 10'
Fuselage 36"

BIGGEST UTILITY - can be
used on 10 foot lines, even
in a backyard.

BIGGEST EYE APPEAL - so jewel-like
in design, no one can resist it!

Complete "big plane" feel with
landing gear to wing struts.

BIGGEST THRILL - as you do exciting
wingovers with a sport biplane.

BIGGEST REPUTATION - the name
everybody knows in engine-powered
modelling - Thimble-Drome.

9th

"Li'l Stinker"

Thimble-Drome

First Ready-to-Fly Biplane

Fully Assembled - Flight Tested



